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ABSTRACT

The bilingual (Chinese/English) journal published annually for Hong Kong educators contains articles in a wide range of areas and at all levels of education. Articles include: "Micropolitics in Managing Bi-Sessional Primary Schools: A Case Study of the Interactions between Partner School Heads" (Cheung Wing-ming); "On Features of Implementation of the Whole School Approach to Guidance" (Xiaodong Yue); "Quality Distance Education--The OLI Model" (James Y. W. Tong); "Team Development: A Multidimensional Approach" (Allan Walker, Kenneth Stott); "The Investigation of the Management Technique and Leadership Strategy a Primary Headteacher Should Possess Through Historical Events of the Ancient China During the Second Century" (in Chinese) (Chan Ling Hay); "Change in Education and Social Involvement--Hong Kong Experience" (in Chinese) (Au Yeung Chi); "Managing Tutors in Distance Education: Further Issues for Consideration" (Kenneth Chee-kwong Chao); "Review of Cycle Timetabling System" (in Chinese) (Ho Kwok Keung; Wong Wai Keung); "Students' Misconceptions in Solving Mechanics Problems" (Lo Lam Fat and Au Yeung Po See); "Environmental Education in Hong Kong Secondary School: State of the Art" (John Chi-kin Lee); "Promoting Teachers Use of Instructional Technology in Hong Kong" (Sabrina Su-fen Chin); "Chinese Language Teachers' Self Evaluation on Their Professional Knowledge" (in Chinese) (Ho Man-koon); "Fieldwork in Geography: A Review of Purpose and Practice" (Philip Stimpson); "Preparing 'Small' Environmentalists Through Activity-based and Interdisciplinary Environmental Teaching" (Tammy Kwan); "Common Errors of Using Chinese Words Among Junior Secondary Students" (in Chinese) (Tse-Shek Kam; and others). (MSE)

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教育曙光

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香港教師會
教育學報

JOURNAL OF EDUCATION
HONG KONG TEACHERS' ASSOCIATION

香港教師會

香港教師會於一九三四年成立，以促進教育同工之間的密切合作、提高教育專業人員的地位、維護會員的權益、增進會員的福利、加強國際間的了解爲宗旨。香港教師會除了是本港一個教育團體外，同時亦是多個國際性組織的會員，如世界教師專業組織聯合會及國際閱讀協會會員。

香港教師會的週年學術活動有：（一）教育研究大會，如一九九一年舉辦的「九十年代普及教育的挑戰」研究大會、一九九三年舉辦的「課程設計、實踐及評估」研究大會等；（二）本港教育專題研討會，如一九九〇年至一九九四年間舉辦的「幼稚園、小學與中學的銜接研討會」、「特殊學校音樂教育研討會」、「如何爲成績稍遜的學生提供有效學習研討會」、「中學新任教師座談會」及「家長教師攜手育幼苗研討會」等；（三）定期出版 *教育曙光*。近年舉辦的國際學術活動，則有一九九〇年與國際自由教師工會聯合會合辦的第六屆及第七屆香港地區教育團體研討會、一九九二年主辦的「我們的下一代——大陸、台灣、香港、澳門基礎教育研討會」、一九九四年協辦在台北舉行的「世界經濟發展中，海峽兩岸暨港澳地區全民教育發展之展望」學術研討會，及一九九五年在上海第三屆海峽兩岸暨港澳地區教育學術研討會。

教育曙光

教育曙光 是一份香港教師會出版的教育學報，每期均請專家評審；每年十一月出版，分發全港幼稚園、小學、中學及大專院校。

教育曙光 以促進專業發展與教學實踐爲宗旨，每期均刊登具實踐和研究價值的文章一至六篇，內容包括專題探討、本港當前教育問題的剖析、教學、輔導及學校行政的研究、教育新趨勢和新意念的介紹等。

歡迎教師、學校行政人員、輔導工作者、教育學者及研究人員投稿。詳情請參閱每期刊登的徵稿啓示。

教育曙光 歡迎各教育機構免費訂閱。請將訂閱表格及郵費寄來香港教師會。

HONG KONG TEACHERS' ASSOCIATION

The Hong Kong Teachers' Association (HKTA), founded in 1934, aims at developing close cooperation among educational workers, promoting the professional status of teachers, protecting the rights and improving the welfare of its members and strengthening international understanding of teacher organisations. Apart from being a Hong Kong-based educational body, HKTA is also a member of international organisations such as Education International and the International Reading Association.

The academic activities of HKTA include:(a)the annual education conference, such as the 1991 Conference on Challenges for Basic Education in the Nineties, and the 1993 Conference on Curriculum Design, Implementation and Evaluation; (b)seminars on educational issues such as "Continuity in preschool, primary and secondary education","Music education in special schools", "Effective learning for the less able students" and "Orientation for new secondary school teachers", "Parents and Teachers together educate the next generation", which took place in 1990-94; and (c) the publication of *New Horizons*. Among the international activities organised more recently by HKTA were the conference on Education for Our Children: Basic Education in the Mainland, Taiwan, Hong Kong and Macau, held in 1992; and the conference on the Prospects of the Development of Public Education in the Mainland, Taiwan, Hong Kong and Macau in the Context of Global Economic Development, held in Taipei in 1994; Conference on Academic Eduation in the Mainland, Taiwan, Hong Kong and Macau held in Shanghai in 1995.

NEW HORIZONS

New Horizons is a refereed journal of education published annually in November by HKTA. It is distributed to kindergartens, primary and secondary schools and tertiary institutions in Hong Kong.

New Horizons is intended as a forum to stimulate and enhance professional development and practice in education. We publish papers that speak directly to practical school and classroom concerns as well as papers that are based on systematic inquiries into educational issues and practices, including those related to the announced theme(s). We also publish presentations of new developments and innovative ideas tried out in schools, in Hong Kong or elsewhere.

Submissions are invited from teachers, school administrators, persons with pastoral duties, educationists and researchers. General information about submissions can be found in the Call for Papers in each issue of the journal.

Free subscription to *New Horizons* is on an institutional basis. Institions are required to send in a request from and pay the postage.

香港教師會
地址：九龍彌敦道242號三樓
電話：852 23673420, 852 23682145 傳真：852 27224813

Hong Kong Teachers' Association
Address 242, Nathan Road, National Court, 7/F, Kowloon, 5Hong Kong.
Tel 852 23673420, 852 23682145 Fax 852 27224813

編者語

教育展望主要是一本為幼稚園至大專教育工作者的雙語期刊，讀物是一群教育人員、輔導工作者、教育學者與專業人員的交流園地。[illegible] 本地的期刊發展至今，成為具有地方性、國際性教育的專業刊物。ERIC（教育資訊中心）最近已將本刊納入資料庫內，[illegible]

[illegible] 本刊的編委會成員主要來自香港，為了確保本刊文章的質素，本刊亦邀請了澳洲、加拿大、中國、澳門、美國、台灣等地學者擔任本刊的顧問。每篇投稿文章均經過兩位專家匿名評審，有時更邀請第三位專家作出評審。評審約需兩個月，[illegible] 歡迎各界人士多多支持。

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From the Editor

New Horizons in Education is a bilingual journal primarily for educators from kindergarten to the tertiary sector. Its role is to serve as a forum for teachers, school administrators, counsellors, educators and researchers to exchange insights and discoveries derived from their professional practices and inquiries. The journal has gradually developed from serving the local educational sector only to one recognized by the broader international educational community. For convenience, advisers and reviewers are drawn mainly from Hong Kong. However, in order to ensure the quality of the contributions, reviewers are also elicited from Australia, Canada, China, Macau, Singapore, Taiwan and the U.S.A. We are especially pleased to announce that the ERIC (Educational Resources Information Center) has also included our journal in their data base, indicating the increased importance and standing of the journal internationally.

For each manuscript, two reviewers are invited to review it anonymously. On some occasions, a third reviewer is asked to judge the quality of the manuscript. The reviewing process usually takes about two months. Suggestions from the reviewers are then sent back to the authors for modifications or resubmissions. We hope you continue to support this very worthwhile journal.

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New Horizons In Education

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Micropolitics in Managing Bi-sessional Primary Schools: A Case Study of the Interactions between Partner School Heads

Cheung Wing-ming

The Hong Kong Institute of Education

Bi-sessional schooling was a temporary administrative measure launched to relieve the acute need for more primary school places some thirty years ago (Cheng & Cheung, 1994). Despite the prominence of bi-sessional primary schooling in Hong Kong, very little study has been conducted to investigate their management and operations (Chiu, 1990). Responding to this, the present study explored the interactions between the heads of a bi-sessional primary school in the context of their work in managing the school within stringent resource realities to achieve the school mission and a sense of school unity. Results of the investigation suggested that the micropolitical dynamics between the heads were different at two stages starting from the day when the afternoon head joined the school. The two stages of micropolitics identified were the Assimilation Stage and the Partnership Stage. In the Assimilation Stage, the heads worked in a "master-apprentice" dependence relationship. Transition to the Partnership Stage was a bitter experience for the heads, yet healthy for the school as a whole.

Introduction

Background. Bi-sessional schooling was a temporary administrative measure launched to relieve the acute need for more primary school places some thirty years ago (Cheng & Cheung, 1994). At present, the majority of Hong Kong's primary schools are still operated bi-sessionally. Despite the usual practice of appointing two school heads to manage the two separate sessions, a bi-sessional primary school is classified administratively by the Education Department as one school. These heads, working independently under the same school supervisor, devise measures, such as pre-printed exercise books, school badge, school regulations and open day, to promote the sense of unity so that pupils and staff will not feel dissociated (Chiu, 1990). On top of these, the formulation of a shared school mission is crucial for effective functioning of the school as a whole (Beare, Caldwell & Millikan, 1989; Caldwell & Spinks, 1988, 1992; Cheng, 1993a; Cheung & Cheng, 1995 in press). It is through working towards this mission that staff from both sessions may identify themselves as members of the same institution under the leadership of the supervisor. With the mission reinforced by the school supervisor, the two school heads work separately with their own teams of professional staff and the common team of support staff towards achieving the set mission. The school mission generates a 'binding' force for the two heads to work cooperatively.

One phenomenon that is worth noting is the popularity among parents of morning sessions over afternoon sessions (Chiu, 1990). It is generally inferred that this popularity may be built on parents' preference of availability of time for parent-children interactions at home. Another factor might be the timing of operations. Normally, when the afternoon session comes to operation, the morning session has already operated for one or more years. This lead time might provide

the morning session the necessary opportunity to lay a firm foundation and reputation in the district. Combining this lead time with parental considerations of the 'availability of time', we may see that an advantageous position for the morning session over the afternoon session is developed [1]. In this way, afternoon sessions are relatively unpopular with parents. This perception also appears to extend to teacher recruitment. Difficulties in recruitment and unfavorable perceptions among parents can hinder afternoon heads in achieving the mission.

Neither do the morning session heads earn full autonomy in working independently towards achieving the school mission since they are normally bounded by the emphasis of school unity. They do not always have a free hand in managing their sessions since they need to seek cooperation from their counter-parts in the afternoon sessions on decisions that might jeopardize school unity. This is always viewed as an additional constraint for managing their sessions when compared to their total governance at the initial operation stage without the afternoon sessions.

Resources scarcity always exists in schools (Caldwell & Spinks, 1992; Cheng, 1993a; Cheung & Cheng, 1995 in press; David, 1989). This further bounds the heads in managing their sessions. Since the two sessions are treated as one school, all resources allocated by the Education Department are not provided separately. Apart from teaching staff, many other resources are shared between the two sessions, such as support staff, accommodation and teaching resources. Very often, competition for resources between the two sessions is manifested.

From the above, it seems that behind the emphasis of school unity and common mission, internal competition may exist between the two sessions for parental popularity, control of resource and management. Within this working environment, the heads may face dilemmas in which they need to work as partners for the betterment of the whole school but sometimes as competitors for the effective management of their own sessions. Thus, it is interesting to examine the micropolitics between the heads when they manage the school within stringent resource realities to achieve the school mission and sense of school unity.

Micropolitics in school. Indeed, schools are generally conceived as political systems within which members of the staff with their own needs and interests are political actors (Bacharach, 1983; Sergiovanni, Burlingame, Coombs & Thurston, 1992). Within this political arena, participants use different strategies to achieve their own interests and goals in schools. Normally, this is achieved through the exercise of various forms of powers (Ball, 1987; Blase, 1991, 1993; Bacharach, 1983; Hoyle, 1986). Thus, micropolitics in schools is the use of power by individuals to achieve their goals in schools.

Bacharach & Mundell (1993) further classified power into authority power and influence power. Authority power is the legitimate right to make final decisions. Thus, authority power comes with one's position in the formal organizational hierarchy. On the other hand, influence power rests with one's expertise, possession of valuable information or other entities that can be used to exchange with the legitimate decision makers. Thus, interest groups or individuals with influence power will attempt to persuade those with authority power in the process of decision making in schools (Bacharach & Lawler, 1980).

Within the world of bounded rationality and embedded interests in schools, the existence of interplay between parties with authority power and parties with influence power is inevitable. Focusing on the micropolitics dynamics in schools, Bacharach & Mundell (1993) proposed that the following four different scenarios are possible.

(a) individuals/interest groups empowered with formal authority try to impose their logics of action on individuals/interest groups with influence power **(micropolitics of domination)**
(b) individuals/interest groups with influence power try to persuade those in authority **(micropolitics of participation)**
(c) two groups with authority try to impose influence on each other **(micropolitics of bureaucracy)**
(d) two groups with influence power try to impose influence on each other **(micropolitics of the grass roots)**

Linking the outlined bi-sessional primary school management to the above, the focus of this study will be on scenarios (a) and (c). When both school heads are exercising their legitimate powers in managing their own sessions while attempting to achieve the sense of school unity and mission,

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micropolitics of bureaucracy may be vivid. On the other hand, when certain areas of administrative work (say, finance control of the school) is dedicated only to one of the school head (most likely to the morning head) by the school supervisor, the interactions between the two heads will easily fall into scenario (a) in which the morning head is the key actor of the micropolitics of domination.

Despite the prominence of bi-sessional primary schooling in Hong Kong, very little study has been conducted to investigate their management and operation (Chiu, 1990). After conducting a quantitative survey of the administration and operation of bi-sessional primary schools, Chiu (1990) proposed to further explore the management of bi-sessional primary schools. Responding to these, the focus of the present study is set to investigate the working relationship of the morning and afternoon session heads; specially the negotiation, conflict and competition, if any, that takes place between them in managing their own sessions separately while attempting to achieve the school mission and unity.

Methodology

Method Used. When addressing the new revolution in administrative and organizational theories, Owens & Shakeshaft (1992) indicated that owing to the complexity of the school organization, qualitative methods which lead to the development of grounded theories and complement the traditional hypothetical-deductive approach should be used. They stressed that qualitative methods are very appropriate as a well-founded means for investigating systematically administrative practices. Their view of using qualitative methods to gain an in-depth understanding of organizational behavior is also shared by other theorists like Downey & Ireland (1979) and Fry, Chantavanich & Chantavanich (1981). Following this, the present study is a preliminary study on the administrative practices of bi-sessional primary school heads through in-depth interview method - which is one of the most important sources of case study information (Yin, 1984).

Selection of the case . Due to the preliminary nature of this study, only one school was studied. The school chosen was ABC Primary School, an aided school in the New Territories, operated by a big school sponsoring body, XYZ Association [2]. The following table summarizes the basic characteristics of the key actors and the school.

Characteristics of the School	Personal Data of the Morning Session Head, Mr. Chan	Personal Data of the Afternoon Session Head, Mr. Wong
The school, located in the New Territories. It is sponsored by XYZ Association. The school was established 5 years ago and is popular among parents. At present, there are 24 classes in AM session and 13 classes in the PM session.	Male, in his late 40s. He has been school head for 11 years. He was appointed head 5 years ago to start the operation of ABC Primary School. Prior to this appointment, he was the afternoon session head of another school sponsored by the same school sponsoring body.	Male, in his late 30s. Prior to his present appointment three years ago as afternoon session head, he was a senior teacher for 6 years in another school sponsored by the same school sponsoring body.

When selecting the case, it was noted that the afternoon session head is junior to the morning head in terms of the seniority of being a school head. This phenomenon was first confirmed by a very senior school head, Mr. Lee, of the same school sponsoring body. The researcher further confirmed the phenomenon with other senior school heads of two different large school sponsoring bodies. According to the heads, it is generally true that the afternoon school head is junior to his/her partner in the morning session. In view of the result of this verification process, the selected case is believed to be rather typical.

Pilot Study Interview. Since the present study adopted a semi-structured in-depth interview approach, the researcher conducted a pilot study to fine tune the pre-set directions for exploration in later interviews. Another morning session head of same the school sponsoring body was interviewed. The directions of exploration were (1) the school context; (2) the experience of being an afternoon session head; and (3) the working relationship between the two heads. Based on the results and experience obtained from the interview, the researcher fine tuned the approach and direction of exploration in the main study interview.

Main Study Interview. A total of 4 interviews were conducted. Among which two were follow up interviews. They were not planned at first. It was only after the initial interviews, that researchers decided to interview the two heads again. This was due to the fact that some of the categories which emerged during the initial interview were not noted by

the researcher. These categories were identified when the researcher later analyzed the transcripts.

In order to create a natural atmosphere, the researcher did not take any notes during all interviews. Yet, with the consent of the interviewees, the interviews were recorded by tape in the heads' offices. The recorded interviews were then verbatim transcribed from the tape for analysis.

Findings and Analysis

In order to understand the dynamics of micropolitics that exist in the working relationship of bi-sessional primary school heads, it is necessary to first provide an overall picture of the school under examination. To achieve this, general descriptions about the school context and the heads are outlined below prior to presenting the major findings of the study.

The School Context. The data collected from both the heads and the observation of the researcher indicated that ABC Primary School was popular among parents, especially the morning session. The school has a very simple mission first shared in the morning session to become the most popular primary school in the district. This mission was later communicated to the afternoon head and his staff. It was noted that both heads shared this mission and indicated that they were working towards it.

The afternoon session currently had 13 classes. Mr. Wong, the afternoon head stressed that three years ago when his session started operations, there were only 8 classes, and 10 classes in the year before and this year the figure grew to 13. He was satisfied with the growth. Yet, he had a sense of inferiority when compared to his partner who had already 24 classes.

Another observation was that the working environment of the morning session was rather tense while that of the afternoon session was relaxed. This can be illustrated by the different dress style of teaching staff in the two sessions. Although, the mean age of teaching staff was approximately the same, it was noted that afternoon session teachers dressed more casually, some of them even wore jeans. It was later found that both heads had different dress requirements of teachers. The morning head had a rather strict requirement whereas the afternoon head was very free in this respect.

The deviation in working environment was further verified when the researcher communicated with support staff members. This was possible because the scheduled four interviews allowed the researcher to be more associated with the support staff - the workmen and the clerical officers. They revealed that when the morning head was absent, they felt relaxed and they loved to work under the supervision of the afternoon session head. It was noted that the school climate in the presence of the morning head was totally different from that of his absence.

The Heads. Mr. Chan, the morning head, worked for the XYZ Association for more than 20 years. He was appointed head 11 years ago. Since then he was the afternoon session head of two primary schools in the same school sponsoring body. ABC Primary School was the third school he served as head and his first as morning head. According to Mr. Chan, it was a very special and yet "bitter" experience for him since he believed that his first service as afternoon head was not recognized and resulted in staying in the afternoon session for some 6 years. In the eyes of the researcher, Mr. Chan had a very negative feeling about being an afternoon head. The following transcription was quoted to support this observation:

Researcher :	What is your feeling of being a morning session head in comparing to your previous post as an afternoon session head ?
Chan :	Oh ! It is totally wonderful. Finally, my work is recognized. I love to be a morning session head.
Researcher :	How did you feel when being an afternoon session head ?
Chan :	Awful! a second class head. Oh ! not even a head.
Researcher :	What makes you have this feeling ?
Chan :	People might think that being a head is wonderful. I would say being an afternoon session head is not so. You will surely have bad feelings when you find that all your work as a school leader is controlled by the more senior morning session head. At that time, I found myself not a leader but an executive officer of the morning session head.

Apart from the above view of being a head, Mr. Chan was very structural and task oriented in his work. In his words, he created a very systematic filing system for the school. To illustrate this point, he presented a three-page list of file classification to the researcher. Moreover, he fixed quite a number of rules to control staff members. For example, he designed a work schedule for every workman to observe. By referring to the schedule, he know the whereabouts of any workman at any time during school hours. Another example was the control of staff's dress style. He did not allow female staff to wear trousers of any kind, even in winter.

Mr. Wong, the afternoon session head, was appointed head three years ago. ABC Primary School was the first school he worked as head. He revealed that he was not totally familiar with the work of a school head at the beginning. He asserted that he was lucky to have the experienced Mr. Chan as his partner in the morning session. He seemed happy about the arrangement to be an afternoon head. He admitted that at the time of first appointment, he did need Mr. Chan's help. However, he was currently unhappy with the working relationship between him and his partner. The following transcription illustrates this point.

Researcher :	How do you see his help (Mr. Chan) now ?
Wong :	I don't think I need his help now. I have my way of doing things. But (he sighed) sometimes, I can't help his interfering into my business.(paused .....). He is too dominant.
Researcher :	Can you give me an example?
Wong :	There are numerous examples. For instance, he instructed me to be strict in managing the support staff. I just can't. Because I believe that when people work happily in harmony, their output will be maximized. I just can't buy his philosophy of managing people. I treat my staff as partners not slaves.
Researcher :	So what did you do ?
Chan :	I just did not follow. I have my own way of doing things.

The above also demonstrates how Mr. Wong put his own beliefs in work. He did not give way easily. Moreover, very different from Mr. Chan, he was very relationship oriented. These differences in management philosophy intensified the conflict of the heads in the institutional context outlined above.

Working Relationship of Heads. The working relationship of the two heads could be traced back to the day when the afternoon head reported for duty. That was the first stage of encounter for the two heads. For the morning session head, the afternoon head was an invader of his sole governance of the school. Prior to the afternoon head's assumption of duty, the morning school head was the only boss in the school who controlled all the administrative matters including the management of support staff, school building and other related resources. However, when the "invader" came, the management of all these entities was officially cut into two halves; with one half given to the less experienced afternoon head. That was considered a trim down of authority and power for the morning head. He thus developed a sense of bad feeling towards the new comer - the afternoon head. The following illustrates how Mr. Chan felt when Mr. Wong reported for duty.

Researcher :	How do you feel when Mr. Wong reported for duties to take up part of your administrative duties ?
Chan :	I was happy to have him working with me. But, I felt uneasy to hand over some of my responsibilities and decision making power to an inexperienced person.
Researcher :	How was your work changed ?
Chan :	It didn't change much when he first came. You know, he was so inexperienced. I just can't pass all administrative work to him because this will surely put him to a very difficult position.
Researcher :	So what did you do ?
Chan :	I just kept on working. Ah ! I taught him while controlling the outcome. I just wanted things to be in order.

The above suggests that although Mr. Chan conscientiously accepted Mr. Wong's existence - he indicated that he was happy. However, his reaction to this change was to "keep on working" and "control the outcome". When addressed to the present situation, he firmly replied that he was unhappy because Mr. Wong was moving too far from his task oriented practice.

All the above findings suggested that there were different stages in which the two heads interacted differently. They seemed to be working happily together before Mr. Wong was competent enough to handle all the administrative issues by himself in his session. This may be classified as the initial stage or the **Assimilation Stage**. In this stage, the heads were in their "honey moon" working relationship, in which confrontations seldom occurred. When the afternoon session head was competent in his own session's administration, the working relationship drastically moved to the second stage or the **Partnership Stage**. The emergence of these two stages can also be supported by Mr. Wong's feeling, cited in the last section, regarding his acceptance of Mr. Chan's help when he first reported for duty and later rejection of the interference from Mr. Chan into his work. The forthcoming discussion will focus on the micropolitical dynamics of the two heads in these two stages.

The Assimilation Stage. On entering this stage, the afternoon head was formally empowered to manage his own session. This was important for him to gain the passage from the status of teacher to headship. In order to allow the headship status to take shape, he had to take up administrative work. However, due to his inexperience in administration, his expert power in school administration was limited. That formed a dilemma in the process of passage to headship. Firstly, he was empowered with formal authority to perform his administrative duties, yet his incompetence in administration inhibited him to work competently. On the other hand, he needed to enable his passage to headship to take effect. If he insisted on exercising his authority and power to perform administrative duties at this stage, he would normally experience difficulties or even failures. Those failures would in turn trim down his remaining expert power and result in a further reduction of his competence in administrative work.

On the other hand, the formal empowerment of the afternoon head signified the formal "trim down" of authority from the morning head, who originally held the sole governance of the school. The morning head at that moment had to share his formal authority with the inexperienced " new comer". That again formed a dilemma for him. On one hand, he did not want the administration of the already smoothly run school affairs to fall partly into the control of an inexperienced head who might possibly ruin the business and yet under the formal hierarchy he had to accept the existence of the afternoon head.

The above description paints a picture full of dilemmas at the appointment of the afternoon head. In order to resolve these dilemmas, the afternoon head chose to be submissive in working to his experienced partner. By being submissive, the working relationship was in harmony. That was the survival strategy of the afternoon head and welcomed by his counterpart in the morning session. The following illustrates this point.

Wong : It was really a hard time (at my initial appointment). I have no way out. I have to survive. I don't want to be the one to be blamed because of my incompetence and spoil the already established reputation of the school ..... The only thing I could do is to be cooperative with the morning head in order to get things done.

Researcher : You mean you followed the morning head's instruction.

Wong : Not exactly. I only followed his recommendations, he respected me. I also treasured this practice in order for me to learn the administrative aspect of my work for my future.

Researcher : How would you describe your working relationship with him at that time ?

Wong : Wonderful. Because I followed what he said. He always claimed that he was my master and I was his apprentice. I think I was.

* *

Researcher : How do you compare your previous work as an afternoon head to that of Mr. Wong, your present partner ?

Chan : Oh! he was very nice at the time of first appointment as head in my school. He was very cooperative and listened to what were recommended. I therefore gave him a place to stand in the team of successful school administrators. I trained him. He was luckier than me when I was an afternoon head.

From the above, we see that apart from being submissive in working to the morning head, the afternoon head also put himself at a position to learn from his more experienced partner. A master-apprentice relationship was formed in this stage. Thus, the submissive behavior and learning-training

element of the relationship resolved the originally acute conflicting nature of their relationship and thus rounded up the dilemma described above.

The above strategies of submissive behavior and master-apprentice relationship catered for the survival needs of the afternoon head. Yet, the newly appointed afternoon head needed to gain passage to his headship. The following areas of work were done in order ***to signify his acquirement of the headship status*** without provoking the morning head who at this stage rendered help for his survival as head:

(a) to get ***access to confidential*** staff ***records*** and other records related to the administration of his own session; and
(b) to ***be the instructional and educational leader*** of his own session. Since he was previously a senior teacher, he was very competent in taking up that role.

By achieving the above two areas of work, the afternoon head strengthened his information power and expert power in educational aspects. Symbolically, the access to confidential records provided a labeling effect to the afternoon head in acquiring headship. That was extremely important for his accumulation of power and competence in managing his session. Indeed the credibility of new school heads depends largely on his/her competence to manage (Harvey, 1991). To illustrate this, the following is quoted.

Researcher : What did you do in order to allow your headship status to take shape while learning from your partner ?

Wong : It was really difficult to find a place to "stand" when I first arrived. You see I couldn't do things that would threaten the authority of my partner. My living space at that time was working hard as an instructional leader in my own session. I initiated new instructional innovations and tried to help my teaching staff to enhance the academic standard of pupils.

Researcher : What else did you do ?

Wong : Yes, I showed to every staff members of my session that I have the right to access all confidential records, such as personal files and financial reports, etc. I think that practice was very effective in achieving my status in the eyes of my staff.

Outlined above are the strategies that the afternoon head adopted in working with his partner in the morning. However, that does not mean that the morning head did not change his way of managing the school. The reality was that there was a new comer in his governance of the school. He had to share resources that were formerly solely controlled by him with the afternoon head. In order to maintain his control and influence over the management of the whole school, he adopted the following strategies:

(a) ***worked in extended hours*** and screened all incoming correspondence. The working hours were extended to the school hours of the afternoon session. That measure was important symbolically to signify that he still oversaw the whole school.
(b) kept ***tight control of all agenda items*** of the school management committee as well as other important issues that needed the endorsement from the school managers, such as the promotion of senior teachers.
(c) ***chaired all important meetings***, such as consultation meetings of support staff and professional staff with the afternoon head attending the meetings.
(d) ***used the resources allocated to the afternoon session***. That symbolically signified his possession of the right to access the resources of the whole school. Such practice was possible since he worked in extended hours in the afternoon and the afternoon session did not fully utilize all resources. He might assign work to the support staff in the afternoon and arrange make up lessons/activities for his pupils in the afternoon.
(e) ***be the chairperson of teacher recruitment board***, even though the vacancy was in the afternoon session.
(f) ***made final decisions on all joint activities***, such as the organization of open day, game day and other inter-school activities.

The above were only some of the ways that the morning head exerted his control over the afternoon session head who, in turn,worked submissively to gain a state of harmony as well as to learn from his "master". When there were signs that the afternoon head would not follow his recommendations, the morning head would show his unpleasant feeling and ***warned*** his partner of the consequences of not following the advice. Upon received the threatened failure signal, the afternoon head submitted again to the decision of the morning head. A high degree of dependence of the afternoon head

on the morning head was thus formed. These arguments are supported by the following views of the heads:

Researcher : I fully understand you need to keep the school running smoothly. What did you do to ensure this ?

Chan : I have mentioned that I trained Mr. Wong. In effect, I made all the important decisions regarding the management of the school. I help him to make decision in order to achieve a sense of unity of the whole school.

Researcher : How do you work with Mr. Wong to achieve a sense of unity ?

Chan : We discuss all important matters before implementation. I respected him. I consulted him before I made decisions. He usually agreed with me.

Researcher : Were there any occasions that you two did not have a common understanding ?

Chan : Yes. In this case, I will explain to him the justifications of my decision and warn him of the bad consequence of his moves. Mr. Wong was very understanding. He always understood my point and agreed readily.

* *

Researcher : You said you have to find a living place in your career as head. Please give me some examples that you do not find living space.

Wong : He worked in extended hours from 6:45 am to 6:45 pm every day. He also attended school at 6:45 am in his short weekend. I felt frustrated. You know I live far away and cannot attend school on Saturday earlier than 7:00 am.

Researcher : When did school for pupils begin and end ?

Wong : It began at 7:45 am and ended at 5:45 pm.

Researcher : How do you feel about that ?

Wong : I treated that as a challenge to my authority. I think that he wanted to show to others that he was still overseeing the whole school. What was more ridiculous was that sometimes he came to my office at 6:30 pm to "release" me in the presence of the workmen.

Researcher : Why do you use the word "release" ?

Wong : Oh! (he sighed). He said, "Mr. Wong, it's late. You can leave the school now". How stupid would I be if I left the school at once. He just wanted to show that he was the overall in-charge of the school.

Researcher : Please give me more examples of this.

Wong : There are numerous. For instance, he once told me that it was he who gave me a living place in this school. And he controlled all important agenda of the school's management committee..... ..... He controlled all matters related to teacher recruitment and promotion as well as other matter related to the management of the school.

Researcher : How did you deal with him when you had different opinions in achieving a sense of school unity ?

Wong : I attempted to voice out my opinions. He acted as if he respected my views. However, upon receiving some warnings from him that my views are not workable, I submitted to his proposal.

Researcher : Were there any occasions he followed your recommendations ?

Wong : Not at all. Not in major and important issues.... (he paused for a while). Yes, there were some occasions but those were minor issues. For example, he once followed my advice to buy a certain kind of teaching aids for the school. But, I considered this very trivial.

Researcher : Let's us go back a little. How did you feel about Mr. Chan's extended hours of work ?

Wong : I found it an invisible control of my work. Sometimes, I found myself very relieved when he was absent from school. He gave me a sense of tight control.... (he paused again). But I felt also at lost and incompetent when he was not with me. Oh! I realized that I was at that time very dependent on him.

The Partnership Stage. Transition from the Assimilation Stage to the Partnership Stage depended on the ability of the afternoon head to attain competence in managing his own session and to reduce the dominance of the morning head. One of the important indicators for passage to this stage was the afternoon head's resistance to follow the advice of the morning head on issues related to the management of his own session. In other words, an increasing degree of independence was evident. The following quotations reflect this point:

Researcher : You expressed that you didn't want his help now. When did this come to being ? How did it take shape ?

Wong : Frankly speaking, I did not want his interference into the management of my own session from the first day of my appointment as head. (he then reiterated his survival needs). I determined to have a new beginning this school year after I assessed my own competence in managing my session. You may note that he stressed strict control of staff while I have a different philosophy. I want a harmonious working environment. Therefore, I started to change the policy of the strict requirement on dress style of my teaching staff this year. I allowed them to wear whatever they deemed appropriate. I trusted their professionalism and wanted to create a relaxed work atmosphere in my session.

Researcher : What was then the reaction of Mr. Chan ?

Wong : He was very shocked by my action at the beginning of this school term. He came into my office and talked to me in a warning and blaming tone that my action broke the consistency in the two sessions and that the control was too loose.

The passage to this stage needed courage of the afternoon head. This courage was needed for him to face the possible confrontation with the morning head. However, passing through this point meant a breakthrough and the relationship between the two changed swiftly from that of the "master-apprentice" to "partnership". This view was supported by Mr. Wong. He agreed that breaking down the dependence bond of "master-apprentice" was difficult and yet he felt relieved after Mr. Chan warned him in the "dress style" issue. When the same issue was referred in the interview to Mr. Chan, he was rather unhappy and remarked that he could do nothing since he had no formal authority to interfere into the decision of the afternoon head in issues related to his own staff.

The working relationship at this stage shifted to that of partners. It should be noted that the initial relationship was very tense since the morning head was unhappy about the change. At this moment, the afternoon head kept strict control of his boundary and invited no helping hands from his previous "master". Thus, both heads were now independent in managing their own team of teaching staff, even though the morning head was not quite happy about some decisions that the afternoon head had made. He kept on warning his partner who insisted on his decisions which were normally supported by his crew of senior teachers.

Regarding the ways to achieve school mission and promote the sense of unity, the two heads need to cooperate, at least in the eyes of the school supervisor. In the first place, both heads did not agree readily with each other on the ways to achieve the shared mission. Thus, a negotiation process occurred in every aspect that was related to the common interests of both sessions. Since negotiations were at the organization level, the school supervisor was the final resort for decisions. According to Mr. Chan and Mr. Wong, the negotiation process was rational and at times sharpened their understanding of the issue. If they did not agree with each other after the negotiation process, a joint senior teacher meeting would be held to resolve the problem. Such meeting was very political since senior teachers from each session supported their own head readily and the number of senior teachers in each session was not the same [3]. The afternoon head who had a smaller number of senior teachers was often defeated. However, according to Mr. Wong such failure was acceptable since the policies to be discussed in this meeting concerned both sessions. Thus, rule by majority vote was acceptable. He remarked that at least the adaptation of the policies was not based on his submissiveness. However, for policies that the heads were confident of their applicability, the heads would appeal to the school supervisor for over-ruling the decisions made in the senior teachers meeting. Both heads accepted and placed credits to this mechanism. It should be noted that this mechanism was the result of the political negotiation between the two heads. The negotiation was possible because both of them were empowered to manage their own session and to cooperate with each other in achieving the school mission through the promotion of a sense of school unity. Without this binding force of maintaining consistency in school policies and the equal formal authority vested in both heads, such mechanisms could not be achieved.

Within the context of comparable authority and the use of the mechanism above, management issues could normally be solved. However, this did not stop the morning head from imposing symbolic control of the whole school. He kept

on screening incoming correspondence, controlling the agenda of important meetings, using the spare capacity of the afternoon's resources and working extended hours. According to Mr. Chan, these acts were essential to keep the school running smoothly since the afternoon head was still junior. Regarding this, the afternoon head did not confront his partner since he knew clearly that his partner held more expert power in school administration than him. To tackle this, the afternoon head usually focused his effort on areas that were not controlled by his partner. For example, Mr. Wong noted that his partner was not keen in managing human resources, especially in taking care of the needs of staff through creating a pleasant working environment. Seeing this living space, Mr. Wong started to take the lead to create pleasant working environment for his teaching staff then for the support staff in the afternoon. This attracted his partner's protest which did not earn Mr. Wong's attention. On this, Mr. Wong was determined to build up his human resource leadership in school. He aimed at creating a strong and clear leadership image in this respect. Indeed, human resource leadership can be one of the effective force in managing schools (Bolman & Deal, 1991; Cheng, 1993b). The following quotations illustrate his determination.

Researcher : How did you respond to your partner's protest ?

Wong : I did not care. I explained to him that I wanted people work under me to work happily and I respected his requirements from the support staff and assured him that the support staff would compile with his requirements in the morning session.

This explained why support staff and teachers loved to work under his leadership. He believed he was successful in creating his image as a human resource leader.

Looking into the present micropolitical dynamics between the heads, it seems that both of them had created for themselves a clear and vivid leadership in respective areas complementing each other. Though they did not agree with each other's leadership orientation, they still could not interfere into their counterpart's style of management. In the context of having the mechanism to solve major and common management issues, their present relationship was rather stable, though with hidden crisis. The most likely area that might trigger crisis would be the control of recruitment and promotion of staff in the coming years since the anticipated vacancies would most likely in the expanding afternoon session. Clearly, this conflict could not be solved in the senior teachers meeting. Higher authority, that is the school supervisor, might be sought. Thus, this higher authority was taken to be the mechanism for dealing with contingent crises arisen from the two heads micropolitical interactions.

Summing Up. Investigation of the present case suggests that the micropolitical dynamics in the working relationship of the two heads were different at two stages starting from the day when the afternoon head joined the school. The two stages identified were the Assimilation Stage and the Partnership Stage.

The major characteristics of the interactions between the two heads at the Assimilation Stage are summarized as follows:

(a) In order to survive, the afternoon head chose to be submissive to the morning head to attain a sense of school unity and create a harmonious working environment.

(b) The working relationship between the two heads took the form of a "master-apprentice" dependence. The degree of dependence was rather high. This relationship is similar to the one-way dependence proposed by Robbins (1989). Indeed, within this context, power stayed firmly in the hands of the morning head.

(c) The afternoon head tried hard to attain his passage to headship by sustaining his own leadership in the afternoon session without ruining the already built harmony in working with his partner. Symbolically, he also attempted to build up his status by accessing the confidential records of the school.

(d) The morning head also took steps to maintain his control and influence over the management of the whole school. The goal of promoting a sense of school unity provided the morning head a very useful instrument to control the afternoon session. Based on this principle, the morning head could interfere into the management of the afternoon session. This was justified by the need to maintain consistency in policies between the two sessions and he is more competent in administrative work. Therefore, logically the morning head became the power centre for the overall management of the school.

Symbolically, the morning head worked extended hours and took action, such as the screening of incoming correspondence, to show that he was the overall controller of the school. Practically, he imposed tight control on all important management issues, such as the recruitment and promotion of teachers. It should be noted that all these measures gave very little living space for the afternoon head to have control of the administration even in his own session.

The passage to the Partnership Stage depended on the competence of the afternoon head and the degree of his dependence on the morning head. If the afternoon head was incompetent and highly dependent, the relationship between the two heads might stay long at the initial Assimilation Stage. Passage to the second stage required the afternoon head to work hard to acquire a status comparable to that of his partner. On successful passage to the Partnership Stage, the roles of the two heads changed from that of the "master-apprentice" to partners. This new relationship was similar to the mutual task dependence relationship proposed by Robbins (1989). Acquiring this kind of task dependence signified the beginning of a new form of working relationship. The major characteristics of this stage are summarized as follows:

(a) Each head managed their own session independently without interfering into others business. It should be noted that there was a tendency for the morning head's control to fade out gradually depending on the tolerance and competence of his partner.
(b) In order to acquire the status of equal partnership, the afternoon head displayed his leadership in areas that his partner did not show dominance.
(c) Common major policies related to the maintenance of consistency in school policies were resolved in the joint senior teacher meeting. A mechanism of majority rule was adopted. This mechanism was the result of the two heads' negotiation.
(d) Appeals on the decisions made in the mechanism mentioned in (c) above could be directed to a higher authority, the school supervisor.

Conclusion

Manipulation of politics is a common activity of human beings (Freund, 1972) and there is no exception in the school setting. Addressing to Chui's (1990) concerns, this study investigated the micropolitical dynamics in the working relationship between the two heads of a bi-sessional primary school and identified two stages of micropolitics.

The heads in this study were working under the intensified conflict and dilemma resulting from internal competition and overt institutional context - shared mission to become the most popular school in the district and a sense of school unity. In view of the typical demographic characteristics of the school and the actors (in terms of working experience), this kind of conflict and dilemma is thus believed to be rather common in schools especially in new towns and districts. Thinking along this line, the findings of the present study, though preliminary, might still have implications for the management of bi-sessional primary schools.

Practically, the understanding of these two stages may inspire teachers and administrators, including the school supervisor, in their work. For teachers, the understanding of such dynamics may broaden their awareness of the management style of their school heads from a micropolitical point of view. This may in turn benefit the interactions between the teachers and their head.

Focused on bi-sessional school heads, the findings might provide insights for them to reflect on their management practices in working with their partners. Through reflection, the awareness level of the heads might be raised and thus benefit their communication and relationship. It is hoped that they might then be more aware of the impact of the micropolitics they manipulated on each other and the school as a whole. In this way, the chance of mis-management due to manipulation of micropolitics may be reduced. By raising the awareness level of the school heads, it is further hoped that bi-sessional primary schools may then be managed more healthily even in the difficult position mentioned in the 'Background' section of this paper.

For the school supervisor, the findings may also serve as a base for understanding the working relationship of the heads under his supervision. It is hoped that with more understanding of the workplace micropolitics, the supervisor may better supervise the performance of the heads and thus benefit school management.

Returning to the micropolitics stages identified in this

study, in the Assimilation Stage the working relationship of the two heads was in harmony; mainly due to the survival needs of the new head and the training element in the relationship. In Hong Kong, school heads receive very little management training prior to their appointment. In many cases, when senior teachers are appointed heads, they are assumed to have the competence in performing the managerial duties without any in-service training except those management training offered by the Training Unit of the Education Department. However, this management training program is not intensive enough and often at inappropriate time. If the training nature in the Assimilation Stage through the "master-apprentice" dependence relationship could be established by future studies, it might be a good on the job training opportunity for new heads. However, the more effective the training , the faster the new head will strike for transition to the Partnership Stage. It should be noted that transition to this stage is a bitter experience for both heads since there will be a drastic change in their relationship. If this transition is well handled by the school supervisor or the school sponsoring body, the Assimilation Stage will be a wonderful chance for training the new head. One of the possible ways to handle the transition is to re-deploy the trained and competent afternoon head to another school. If he is deployed as a morning head, he may later take up the role of the "master" or if he is deployed as the afternoon head of another school, he could then acquire his Partnership Stage easily since that will be a brand new relationship with his new partner.

When addressed to the Partnership Stage, we should not treat it as the terminal stage of the working relationship between heads. Owing to the limitation of using only one case, it is not possible to identify more stages since the afternoon head in this case has only three years of headship and presently the two heads are in the initial Partnership Stage. There might be more stages when the experience of the afternoon session head increases. More cases should be examined in order to have a clearer picture. When such picture of the micropolitical dynamics is confirmed, more practical implications could be inspired and thus benefit the management of bi-sessional schools.

It is evident from this case that the two heads in the Partnership Stage were actually working on achieving the same target - the school mission - under the same supervisor as partners. This triggers the author to propose that the ultimate and ideal state of partnership is the cooperation of two heads in working towards commonly shared goals. In this state, the management strength of each head is complementary. Thus, they are in team work and their efforts in managing the school are mutually strengthening and not weakening. This is in line of the view of Blase (1991). In this way, the school is treated as one and a sense of school unity is anticipated without any trace of any man-made consistency in school policy formulation.

In sum, the findings of this study, though with a non-generalisable nature, may still inspire (1) bi-sessional school heads to reflect on their management practices as well as relationships with their partners; (2) school supervisors to understand the workplace micropolitics of the heads; (3) researchers and administrators to investigate the possibility of using the concept of the Assimilation Stage to train up newly appointed heads; and (4) researchers to further the study of micropolitics in the workplace of bi-sessional school heads.

If the above mentioned implications, especially the training of new heads at the Assimilation Stage and the ideal state of the Partnership Stage, could be achieved, the management of our bi-sessional primary schools, even in present state of resource scarcity, may be moving towards achieving excellence.

Endnote

[1] This inference is validated by telephone interviews of 2 morning session school heads, 3 afternoon session school heads, 2 parents with children in the morning session and 2 parents with chikdren in the afternoon session. The interviewees provided quite a number of factors which were all convergent to the above inference.

[2] On request of the subjects of this study, the original name of the school and the sponsoring body are not disclosed.

[3] The number of senior teachers is determined by the number classes operated.

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Author

CHEUNG Wing Ming, Senior Lecturer, The Hong Kong Institute of Education.

On Features of Implementation of the Whole School Approach to Guidance

Xiaodong Yue

The Chinese University of Hong Kong

This paper discusses four features which the author believes are essential to effective implementation of the whole school approach to guidance in the Hong Kong school system, which are adoption of a humanistic orientation, cultivation of a collaborative school climate, effective consultation with other related professionals, and congruence among values and policies about guidance process. Specifically, the humanistic orientation advocates a deep faith in students' potentials to develop in a positive and constructive manner if a climate of respect and trust is provided. The collaborative school climate leads to shared beliefs and increased cooperation in helping students grow in all directions. The establishment of a consultation network enables schools to provide to students various extra-curriculum activities that seek to enhance their self-worth and self-control. The congruence among these school guidance and management processes helps schools to design guidance activities at multiple levels and with greater coherance. In short, the whole school approach to guidance represents a holistic, organizational approach to delivery of guidance services to students.

推展校本輔導的幾個要點

本文討論了作者認為在香港學校推展校本輔導的幾個要點，它們是人本主義的理論基礎，和諧協作的氣氛，家長與社區人士的支援，輔導各層面間的協作等特點。本文強調校本輔導推行是整個全校教育管理人員的責任之一，通過，將學生的全人發展作重要作用。因此，輔導以成長為中心；面向問題防止；輔導面向全體學生，而不是面向個別學生；輔導與訓導之間和諧存在之；輔導是全社會的職責一些新觀念正在輔導上的指導思想變化，協作化，人性化，多樣化。

Introduction

In recent years, the notion of whole school approach (WSA) has been widely used in education, such as in moral education (Lam, 1992; Lee & Lam, 1991), pastoral care (Hailes, 1990; McGuiness, 1989), discipline (Atkinson, 1989; Burden, 1992; Glynn, 1992), English teaching (Adamson, 1992), and others. A whole school policy may be defined as "a plan for action that unifies all the different elements of the school in the move towards a single goal" (Lee & Adamson, 1993, p. 134), advocating that "the whole includes the parts and is greater than the sum of parts (Wagner & Watkins, 1992). As such, it represents a holistic, co-ordinated approach to organization of student guidance services at primary and secondary schools.

Given the increasing number of behavioral and emotional problems among primary and secondary school students in Hong Kong, the Education Commission of Hong Kong recommends implementation of a whole school approach to guidance "whereby all teachers in a school actively participate in assisting students to resolve their developmental problems (Education Commission Report No.4, 1990, p.29). Thus conceived, it encourages development of various school-based programmes that help students learn to relate to their peers, develop a sense of responsibility, achieve academic success, and enhance their self-worth and self-confidence. Hence, guidance attempts to provide services to all students rather than a few.

Furthermore, the Services Division of Hong Kong Education Department prescribed a set of clearly defined guidelines for the adoption of whole school approach to guidance as well, of which the major ones include (Guidelines on Whole School Approach to Guidance, 1993, p. 2-4):

* involvement of all teachers and school personnel who, under the leadership of the School Head, work together to create a positive school environment and assist all students to be aware of their adjustment and developmental problems;
* cultivation of a reward system and a positive, caring, and

inviting school environment;
- reinforcement of good students' good behaviour through use of preventive and developmental programmes.

Implicitly, the Guidelines advocate the transition from a remedial, correctional or case-work model of guidance aiming at disciplining individual student's disruptive behaviours in class to a developmental, proactive model of guidance aiming at enhancing holistic growth of the student as a person. Such a transition endorses a more positive and integrated approach to understanding and management of students' frustrating and maladaptive behaviours in learning and social interactions.

Since its endorsement, quite a few local educators have written books, journal articles and newspaper commentaries, addressing the theoretical as well as the practical issues in implementing the WSA to guidance in Hong Kong. For instance, Ng (1993) calls for the adoption of the invitational education theory (Purkey and Novak, 1988) in applying the whole school approach. Chow (1993) pleas for better integration of guidance measures with disciplinary measures in resolving students' behavioral problems. Hui (1991) points out that for effective adoption of the WSA to guidance, guidance activities need to be integrated into instructional programmes rather than being carried out sporadically. Lam (1995, in Chinese) emphasizes the importance of enhancing students' positive self-image as the ultimate goal of the WSA to guidance. She pleads for equal treatment of students and provision of various opportunities for success so that may feel positive and confident about themselves regardless of their short-comings or underachievement in other aspects of school life. She also calls for increased collaboration among guidance, discipline and other related committees in developing self-enhancement programmes for students.

In review of this perspectives, this paper attempts to address four features which the author believes are essential to effective implementation of the WSA to guidance in Hong Kong school system.

Adoption of a humanistic orientation

According to the Guidelines prescribed by the Services Division of Hong Kong Education Department, "the ultimate goal of provision of guidance service in schools is not merely remedial or correctional but to create a positive, inviting and caring school environment for the development of all students as whole persons" (Guidelines on Whole School Approach to Guidance, 1993, p.2). Such a statement is in accordance with the premise of humanistic psychology, which advocates a deep faith in the tendency of humans "to develop in a positive and constructive manner if a climate of respect and trust is provided" (Corey, 1986, p.101).

So enhancing students' self-esteem by tackling their disruptive behaviours in a positive manner and with a positive attitude is the goal of the WSA to guidance (Education Department, 1993). Alternatively speaking, the goals/programmes of the WSA to guidance ought to be growth-centred rather than problem-centred. The difference between the two orientations lies in level of confidence in students' ability and potential to change for the better. Without such a premise in mind, the WSA to guidance would become meaningless. In light of the thinking:

- encouragement and acceptance are prized to let students feel being valued and successful;
- emphasis is shifted from enhancing school rules and regulations to exploring individual rights and responsibilities;
- use of positive rewards through praise, certificates and other incentives is maximized to help students control their disruptive and self-defeating behaviours instead of punishing them through criticisms, detention, and the like.

Central to these efforts is creation of a caring and encouraging environment for students to fully develop their potentials in whatever aspects they are good at even though they may behave improperly in other aspects. As a matter of fact, this approach has been widely advocated by many educators and psychologists around the world as well(e.g., Anderson, 1982; Brookover et al., 1978; Hamachek, 1987; Lam, 1986, 1989; McGuiness, 1989; Purkey & Novak, 1984; Rogers, 1969; Rosenshine, 1980; Soar & Soar, 1978, Watkins & Wagner, 1992, etc.). Thus conceived, we should attempt to:

- not to regard students' learning frustrating or disruptive behaviours in class and social interactions as "problems" per se, but regard them as difficulties or developmental obstacles in their self-growth;
- focus on the constructive side of students' problem- solving efforts, as greater the degree of accepting and valuing

the client in a non-possessive way, the greater the chance of success for therapy (Rogers, 1961, 1969);

- trust that students, however disruptive behaviours they may demonstrate, all possess good potentials for proper change and self-improvement;
- try our best to reinforce students' attempts to change or modify their undesirable behaviours in school and elsewhere.

As remarked by Hargreaves and Hopkins (1989, p.186): "the feelings of self-worth and value are likely to be enhanced more by processes of praise, encouragement and support, then by punishment, blame and indifference".

To achieve these goals, it is important for us to create opportunities for success, both within and outside school, for students that would promote their sense of self-worth to themselves as well as to their schools (Ng, 1993; Lam, 1995). It is equally important for us to develop various school-based programmes that help students learn to relate to their peers, develop a sense of responsibility and belonging, and achieve academic success.

We should also be aware that the teacher's use of trust, respect, understanding, and optimism are most powerful tools in communicating with students, assuming that they all possess untapped potential in all areas of human behaviour (Hui, 1991; Lam, 1986, 1995; Ng, 1993, Yue, 1994). Once they are genuinely felt by the students, they are likely to respond positively. In other words, no matter what the circumstances are, teachers ought to let students see themselves as able, valuable and self-directing individuals and encourage them to act in accordance with these self-perceptions (Purkey & Novak, 1984).

Finally, we ought to recognize that in most cases, the students' disruptive or self-defeating behaviours in school may represent their burning desires to claim respect, recognition and self-worth in relation to others. Such desires ought to be properly attended. As well described by the Guidelines, students often display disruptive behaviour in class or resort to drugs and gang membership in order to cope with their low self-esteem in various facets of their lives. Therefore, "an encouraging remark or an accepting attitude from people close to the youngsters will make a big difference and may change the entire outlook of the youngsters" (Guidelines on Whole School Approach to Guidance, 1991, p.4).

In short, a humanistic orientation in the WSA to guidance ensures provision of a caring, inviting, and prizing environment for the youngsters to grow with more positive attitudes toward themselves as well as towards their schools. It also attempts to take a developmental or constructive view of the student's frustrating and self-defeating behaviours in learning and discipline so as to tackle their problems at their roots.

Cultivation of a collaborative school climate

Having a team of teachers helping all students rather than having a few teachers helping individual students is a marked feature of the WSA to guidance. To ensure its success, cultivation of a collaborative school climate is essential. In fact, enhanced collaboration among teachers is also an essential feature of school effectiveness and is instrumental in bringing about the range of changes needed for modern school management (e.g., Cheng, 1993; Little, 1982; Purkey & Smith, 1983; Scott & Smith, 1987; West, 1990).

In recent years, numerous calls for increased school collaboration as the focus of school restructuring have been voiced by scholars from various disciplines (e.g., Darling-Hammond, 1988; Hord, 1986; Jones & Maloy, 1988; Lieberman & Miller, 1984; Rosenfield, 1988; Schmuck & Runkel, 1985; West & Idol, 1990). A collaborative climate is considered as an interactive relationship as well as a technique or vehicle for educational change (Prywamsky, 1974).

The WSA to guidance represents a team effort to overseeing, planning, coordinating and monitoring the various school-based programmes for guidance (Hui, 1991). Recognizing that "the whole includes the parts and is greater then sum of parts "(Wagner & Watkins, 1992), the approach seeks to mobilize all staff members of a school community to help students grow from all directions. Its success depends heavily on the effective communication and cooperation among staff members of a school community who participate in such guidance programmes.

In this sense, implementation of the WSA to guidance leads to cultivation of a more collaborative climate for

the entire school community of shared beliefs, practices, and commitments. According to Hui (1991), guidance should be a concern to all committees in a school and senior teachers in charge of these committees should all agree on the aims, focus, and principles of guidance as well. In such a way, guidance activities can be provided to all students with better consistency and co-ordination. Specifically, there ought to be:

- increased cooperation among guidance teacher/master, discipline master in resolving students' behavioral, interpersonal, or learning problems;
- increased cooperation among guidance teacher/master, discipline master and social worker for developing more effective and stimulating programmes that seek to enhance students' self-esteem and self-growth;
- increased integration of guidance values and principles into school management process, particularly in carrying out disciplinary actions to students;
- increased awareness of using guidance techniques in helping students resolve their learning, emotional or interpersonal problems at school and enhance their feeling of self-worth.

Thus, creation of a collaborative school climate is featured by establishment of a new culture within the school community characterized by a lot of sharing, joint problem-solving, and mutual learning (Roy and O'Brien, 1989). As stated by Ng (1993), a school culture will be established when all people in a school, including teaching staff and non-teaching staff are involved to give support to education in their specified services. Therefore, a school culture of enhanced collaboration among committees of common values, beliefs, commitments of guidance should be a salient feature for the WSA to guidance.

In so doing, the school principals play a central role. Numerous studies have shown the critical role of leadership to effective schooling, staff development, school improvement, and educational reforms (Sergiovanni, 1984; Caldwell & Spinks, 1992; Cheng, 1993; Cheng, 1994; Hallinger & Murphy, 1987). The administrators can establish the management mechanism based on the technology of school development planning, strategic management, and school monitoring (Cheng, 1993; Hargreaves & Hopkins, 1991), from which the problems and conflicts in implementing the WSA to guidance may be readily identified and reduced. In this manner, any effective implementation of the WSA to guidance needs to be blessed with a genuine support and commitment to goals of guidance by school principals. It upgrades the status and significance of guidance work needed in classroom relationships.

In addition, guidance teachers also play a pivotal role not only in generating various school-based programmes for resolution of students' learning or disruptive behaviours, but also in providing to fellow staff members training in interpersonal communication and conflict resolution (West & Idol, 1993). In other words, the school guidance teacher would not only regard himself or herself as the person to initiate various programmes to encourage and cultivate good behaviour among students, but also as the person to offer wisdom in resolving any conflicts that may arise in the interactive process of implementing particular guidance programmes. Thus, they contribute to the collaborative team a particular richness in enhancing or facilitating the group problem-solving process.

Finally, the traditional tension between discipline and guidance committees ought to be melted. Specifically, discipline masters should no longer project a stern, tough image in front of students to force them into abiding school rules and regulations. They should try to look at their work from the viewpoint of a guidance master so as to humanize their attitudes to students (see Figure 1). They should also learn to modify students' maladaptive behaviours by appealing to their needs for self-worth and self-actualization. To achieve these goals, it is highly recommended that all guidance masters take courses in guidance before they start to assume their duties.

In brief, to effectively install the WSA to guidance, a collaborative school climate needs to be cultivated, characterized by enhanced cooperation between guidance, discipline and other relevant committees. The school principal's support to his staff is a pre-requisite to such an effort as "supportive and responsive actions were essential to maintain the morale of the teachers and the momentum of change" (Lam, 1992). After all, a collaborative school ethos is a most valued feature in modern school management.

Effective Consultation with other related professionals

Related to effective collaboration among staff mem-

bers within a school community is effective consultation with experts and specialists in other related professions. In other words, effective implementation of the WSA to guidance could absorb help and consultation from people outside the school community as well to maximize its effectiveness. As a matter of fact, establishment of an effective school-community consultation network is another trendy movement in modern student guidance services.

For instance, Evans (1987) points out that student services professionals need to attend to the moral and ethical dimensions of students' learning experiences and seek appropriate consultation when necessary. Delworth (1989) developed the model of Assessment-Intervention of Student Problems (AISP) for working with college students in the U.S., presenting an integrative approach to management of students' emotional and behavioral problems. The model assumes that student services professionals and other related professionals "must work together in an integrated, systematic way to ensure effective and just treatment of students who exhibit dysfunctional behaviour" (Delworth, 1989, p.1). Specifically, it calls for close co-ordination among minimally five parties within a school community:

- campus counselling and mental health services;
- campus security forces;
- the student services administration;
- the institution's legal counsellors;
- the student services judicial or discipline office.

Taken together, the team may function either as a joint decision-making body or as an advisory group to relevant subject and guidance teachers. In the same vain, Idol and Baran (1992) and West and Idol (1990) outlined the active consultation of school counsellor with other professionals in the following six areas:

- consultation between any two or more individual professionals;
- consultation among members of a child study team;
- consultation between parents of students and school professionals;
- consultation with community agencies and persons outside of the school;
- consultation with persons responsible for special programs for the school;
- consultation among school professionals responsible for specified tasks such as behaviour management and discipline programs.

Drawing on these consultation models, the adoption of the WSA to guidance could seek active consultation and collaboration from parents, social workers, educational psychologists, child psychologists, police officers, community workers, legal consultants, journalists and others. After all, the social and emotional well-being of students is a common concern for all members of the society. The teachers would stand lonely and isolated if they try to care for everything of their students. They need help from all sources so that they won't be burnt out of the teaching profession.

Thus, creation of an effective consultation network across a variety of occupations will help schools to provide to students various extra-curriculum activities that seek to enhance their self-worth and life skills, communication skills, study skills, social skills, and others. Mobilization of such forces could lead to greater efficiency in designing various programmes for students as well.

Summing up, enhanced school-community partnership is another essential element for the WSA to guidance. In this sense, the WSA should mean the Whole Society Approach to guidance as well. In a fast-changing society like Hong Kong, cultivation of any positive and healthy sub-cultures among students is blessed by society's support.

Congruence among values and policies about guidance process

As the WSA to guidance is a dynamic process to guidance involving students, teachers, and school administrators, non-teaching staff members and other related professionals, it could help students grow at the individual level as well as at the classroom and organizational levels (Watkins & Wagne, 1991). It should also integrate guidance activities with disciplinary actions to enable students to follow social rules, develop self-control, and acquire appropriate self-directed behaviours (Hui, 1991). In other words, the whole school approach represents a system approach to helping students achieve emotional, intellectual and interpersonal maturity in various social and educational contexts.

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Cheng (1987, 1991, 1993) argues that a system approach to management involves congruence across different domains and processes. There are such inputs as the aims and content of guidance, human resources, physical resources and into the school system. The conversion of these inputs into outcomes of guidance may be achieved through a school process including principal/administrators' leading and managing, guidance teachers' counselling, students' changing of behaviours, and influences from the contexts of teaching, learning or the whole school organization. The process of management may influence guidance teachers in terms of clarification of goals and outcomes of guidance programmes, and process of guidance may influence students in terms of enhancing their emotional, intellectual and interpersonal growth.

Thus conceived, there should be congruence among different types of outcome for guidance activities. Specifically, there should be congruence across:

- different domains of students' self-development (for example, affective, behavioral, cognitive domains);
- different levels of organization (for example, the individual, class, and whole school levels);
- different aspects of guidance (for example, enhancement of self-control, self-worth, and self-determination);
- different parts of school management process (for example, teaching, guidance, discipline).

In order to maximize the guidance effectiveness, all these types of congruence in process ought to be ensured so that any fragmentation, duplication, and inconsistency in the process of guidance is to be minimized.

For instance, implementation of the WSA to guidance needs to address the following two questions: what do we want students to grow, how do we help them to grow. These two questions are related to different sets of values and beliefs held in the guidance process. The first question addresses goals of guidance, the second question relates to the values and beliefs regarding organization of guidance services.

Seen from a management perspective, the WSA to guidance aims at maximizing the effectiveness of the guidance process. As such, congruence across the values and beliefs of guidance helps to shape the guidance process in a cohesive and effective pattern. The congruence across different domains, aspects and levels of guidance helps to shape the overt characteristics of guidance as well as the content and outcomes of guidance.

In Cheng (1987, 1991), there are examples to illustrate how consistency of values of management, leadership, school climate, classroom climate, and teacher-students relationship determines the level of school effectiveness. These examples support the validity of the theory of congruence in the context of educational management and are illustrative to the effectiveness of guidance as well. For instance, the guidance values of self-development across affective, behavioral, and cognitive domains ought to be consistent with overall goals of guidance to be conveyed at students if the effectiveness of guidance is to be maximized.

Conclusion

Summarizing the foregoing discussions, the success of implementation of the WSA to guidance largely depends on adaptation of a humanistic perspective to human development, cultivation of a collaborative school climate, creation of an effective consultation network and use of a system approach to organization of student guidance services. Besides, the congruence in these processes is essential and ought to be the focus of research on the WSA to guidance as well.

West and Idol (1993, p.678) remarked that: "the school counsellor seems to be uniquely positioned to have a significant impact on the development or enhancement of collaborative school environments for educating students. This is primarily because of the nature of the school counsellor's role as a school-based support staff member and the counsellor's training and skills in communication, interpersonal relationship development, problem solving, and conflict resolution". So the challenge for the school counsellor lies not only in bridging communication between students and teachers, but in bridging communication between colleagues as well.

Tracing back the development of guidance services in Hong Kong, it has evolved from a career guidance approach in the 1950s to a case-work approach supplemented with various group programmes in the 1970-80s, and then to the present whole school approach (Crawford & Hui, 1991). Over the years, the guidance services have been substantially expanded, as have the visions and missions for guidance and human development. The present implementation of the WSA to guid-

ance poses a new and even greater challenge to school teachers and principals in Hong Kong -- how can we help students grow in a more self-enhancing manner and how can we make ourselves more accessible to students? The challenge is long-lasting and is manifested in every aspect of education and teacher/student relationship.

To conclude this paper, I would also like to quote a statement made by Ng (1993, p.51): "a whole school approach is not an unattainable ideal. It is a vision, ready to be realized, tested, tried, failed and tried again, all dependent on ourselves". The success of implementation of the WSA to guidance will ultimately depend on how much we are committed to its goals and missions, and how much determined we are about ourselves.

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Author

Xiaodong YUE, Lecturer, Deprtment of Educational Psychology, Faculty of Education, The Chinese University of Hong Kong

Quality Distance Education - The OLI Model

James Y. W. Tong

The Open Learning Institute of Hong Kong

The Open Learning Institute of Hong Kong was established by statute in Hong Kong in early 1989. While its mode of delivery and entry requirements may differ radically, the objective of the OLI is to provide education of directly comparable academic quality to the other tertiary institutions in Hong Kong. This paper attempts to describe distance education and how it is being practised in a formal way in Hong Kong.

Introduction

Hong Kong has earned a world-wide reputation for its business acumen and entrepreneurship. By adopting a non-interventionist policy toward business affairs, the Hong Kong Government has allowed a free enterprise system to flourish. This non-interventionist approach is not only limited to private sector business and industrial concerns, it is also adopted for public sector policies and practices. In education, control is often left to, or shared with, non-Government institutions.

Open education through the distance learning mode was formally mentioned by the Hong Kong Government in the Education Commission Report No. 1 which was published in October 1984. The Education Commission was established by the Hong Kong Government on 2 April 1984 in response to the Report "A Perspective on Education in Hong Kong" made by the Visiting Panel comprising leading educationists in Hong Kong and overseas. The report, which was published in November 1982, was submitted to the Governor of Hong Kong with the consolidated advice on the education system as a whole in the light of the needs of the community.

In Report No. 2, which was published in August 1986, the Education Commission formally endorsed their views and submitted their recommendations to the Hong Kong Government for the establishment of an institution to offer distance education through an open entry system covering a full range of possible attainments in further education in Hong Kong, from sub-degree to second degree level.

Distance Education

In the study of education, distance education is considered a form of "non-formal education". Non-formal education, as defined by Coombs et al (1973), is "any organised educational activity outside the established formal system – whether operating separately or as an important feature of some broader activity – that is intended to serve identifiable learning clienteles and learning objectives". Non-formal education shares some of the essential features of formal education in that it has purposefully organised activities but it also offers flexibility and in some instances learning through experience.

Distance education has a definite place to play, as described by Perry and Rumble (1987), because it offers an alternative method of meeting increasing demand for education. It can complement conventional education by offering an opportunity for the expansion of educational opportunities at lower cost and at the same time ensuring more equitable access to education than exists through the conventional system.

Definition of Distance Education

Various scholars have attempted to define and describe

the activities of distance education. Keegan (1988) has conveniently summarised that distance education is a form of education characterised by:

- the quasi-permanent separation of teacher and student throughout the length of the learning process;
- the influence of an educational organisation both in the planning and preparation of learning materials and in the provision of student support services;
- the use of technical media: print, audio, video, or computer to unite the teacher with the student and to carry the content of the course;
- the provision of two-way communication so that the student may benefit from or even initiate dialogue; and
- the quasi-permanent absence of the learning group throughout the length of the learning process so that students are usually taught as individuals and not in groups, with the possibility of occasional meetings for both didactic and socialization purposes.

The following diagram briefly describes the role of distance education as opposed to conventional education and correspondence programmes:

Conventional education

Institution——Teachers/Lecturers——Students

(In addition to face-to-face classroom learning, students will be provided with other support services, such as library, laboratory, counselling, etc.)

Distance education

Institution——Tutors——Students

(In addition to face-to-face tutorials, students will be provided with other support services, such as library, laboratory, counselling, etc.)

Correspondence education

Institution——Students

(Students will not be provided with face-to-face tuition or other support services.)

Very often, people cannot distinguish the main differences, features and characteristics between correspondence education and distance education. They are under the impression that the two forms of education are virtually the same one. In a typical correspondence education situation, students are literally left to study on their own. They will not get any form of student support services to help them overcome difficulties in self-study and progress in their various stages of learning.

Distance education, on the other hand, offers students all the necessary assistance they need to strengthen their learning process. Unlike conventional education where students have to attend regular classes, students embarking on a distance learning programme can expect to have scheduled contacts with their tutors, either over the telephone or face-to-face at tutorial sessions. Delivery of distance education will employ multi-media approach, which is accessible to most of the students. To support their studies, students can access the library facilities, counselling service, and meetings with the subject experts of the institution providing the distance education. They will certainly not feel isolated or left entirely on their own to struggle in their studies.

Benefits of Distance Education

Distance education is becoming increasingly popular particularly in developing countries where the opportunity for formal education for adults is limited. Many of the working adults who miss out on schooling at various levels may seek to obtain or upgrade their qualifications when conventional routes are not open to them. Some of the benefits as highlighted by Sewart et al (1988) of distance education are:

- It allows access to education for those who are disadvantaged in some way (socially, economically or geographically) and there has the potential to reduce the elitism inherent in the conventional system.
- If it is efficiently organised and attracts large numbers of students, it can be highly cost-effective by virtue of the principle of economies of scale.
- It can often be a cheaper alternative to conventional education, in which case it represents an efficient use of limited resources.

- It has been shown to be particularly suited for all kinds of professional upgrading, such as in-service teacher education.

- It is very flexible, offering enormous possibilities in terms of the variety of programmes that can be made available at different educational levels, and it can easily be adapted to alleviate the problems of specific regions or groups.

- It allows a shift in emphasis from teaching to learning, in that the students are made responsible for their own learning and consequently they have greater choice over the content of what is being learnt, the speed and pace of learning.

The Components of Distance Education

A variety of modes and systems can be used to deliver distance learning programmes. Many of these can be combined into multimedia packages that appeal to students with different learning styles. The following are the common modes of delivery:

Print-based material

Print-based material has always been the dominant medium not only in distance education, but in all forms of education. Surveys of distance education show that print-based material is by far the commonly used medium and it is also considered the most important medium in the presentation of learning materials by distance educators. It is familiar, inexpensive, and portable.

Audio-cassette

As with any pre-recorded, learner-controlled media, audio-cassettes allow students to control the time of day and week in which they study and the speed with which they progress. Flexibility and ease of manipulation may make students feel that they are in control of their learning.

Telephone

Telephone communication includes single and multiple user systems. Monologues, or one-way recorded messages, may be accessed by telephone. Dialogues between teacher and student for tutorial, feedback, or other purposes are the most traditional uses of the telephone in distance education.

Teleconferencing

Teleconferencing combines broadcast lectures, recorded audio materials, telephone conversations with the teacher and other students, and, sometimes, visuals on electronic blackboards or slow-scan television sent over another telephone line.

Radio

Radio is used for adult education in many nations and is still a fast-growing phenomenon in some developing nations. In nations with low literacy rates, radio is an important adult education medium because it can to some extent replace print-based material.

Television

Television is a video medium with great potential as a distance learning mode. With the introduction of cable television, it can also be used for educational purposes. Interactive cable television allows students access to programmes and talk with the instructor as do groups in central sites.

Video-cassette

Video-cassettes and video-cassette recorders have added a new dimension to the development, distribution, and use of educational television programming. Any programme developed for one-way broadcast can also be put on a video-cassette.

Computer

Computers can be used to present educational material and to perform many other functions in the process of instruction. Most computer applications in distance education can be classified as computer assisted instruction, computer managed instruction, or computer conferencing.

The Open Learning Institute of Hong Kong

Following the adoption of the recommendations contained in the Report No. 2 submitted by the Education Commission, the Hong Kong Government decided to set up a Planning Committee in January 1988 to draw up implementation plans for the establishment of the Open Learning Institute of Hong Kong (OLI). The OLI would be a new institution, along

with the other five conventional tertiary institutions (University of Hong Kong, Chinese University of Hong Kong, Hong Kong Polytechnic, City Polytechnic of Hong Kong, and Hong Kong Baptist College), to be established by statute. It was suggested that the OLI would be a similar set up as the Open University in the United Kingdom (UKOU).

The programmes offered by the OLI would be subject to academic accreditation by external bodies and its awards were expected to be recognised both locally and overseas. Entry to the study programmes offered by the OLI would be open. There were to be no prerequisite academic qualifications, although students would enrol in foundation courses in the first instance to ensure that they had mastered the basics before being allowed to progress further.

The OLI's programmes would be structured on a credit unit system and students might, within broad limits, proceed at their own pace. There was no fixed time for a student to qualify for an academic award. The OLI would teach through distance learning methods. These included a basic package of course materials in the form of printed texts, which might be supplemented by audio/video materials and broadcasting. Face-to-face tutorials would be provided at study centres in convenient locations at suitable intervals.

The Planning Committee (1989) estimated that the student enrolment for the first six years, which was recommended to be the normal planning cycle, was:

1989/90	3,000
1990/91	10,000
1991/92	13,000
1992/93	16,000
1993/94	18,000
1994/95	20,000

Funding of the operation of the OLI for the first few years would be financed by the Hong Kong Government up to March 1993. Thereafter, it was expected that the OLI would be self-financing.

The Structure of the OLI

The policy-making body of the OLI is a Council and membership of which are representatives of the Hong Kong Government, leading business and industrial organisations, and academic institutions, both local and overseas. The chief executive of the OLI is a Director, who is assisted by an Assistant Director, and his immediate subordinates are the academic deans and head of the following four schools and the centre for community and continuing education:

School of Arts and Social Sciences
School of Business and Administration
School of Education
School of Science and Technology
Centre for Community and Continuing Education

Each school offers a number of foundation, middle, and higher level courses. Courses at higher level will be grouped in specialist disciplines, or strands, and students can select the disciplines of their choice.

The Academic Programmes

At present, a student will have to earn 120 credits to qualify for a Bachelor's degree and 160 credits for a Bachelor's degree with Honours, such as the degree of Bachelor of Business Administration majoring in Human Resource Management. It is expected that an average student will take about four years to earn a Bachelor's degree and five years for a Bachelor's degree with Honours. Individual courses are either developed locally or purchased from overseas institutions, such as from the UKOU. However, all courses should contain a fair amount of local information, culture, illustrations, and practices. Literally all of the courses, other than those in Chinese, are in English. So are the text books and supplementary readings and other reference materials.

Quality Control of the Academic Programmes

A locally developed course is subject to rigourous quality control. This includes assessment of the academic content of the course under development by an internal course review group, which will comprise the subject experts and educational technologist. The completed course materials, including supplementary readings and audio-visual components, will have to be assessed and validated by an external course assessor who must be a senior academic in a leading tertiary institution. After each presentation, the course materials and assessment components will have to be updated in light of changes that may affect the content and relevance of the course. A major revision to the course is required once

every four or five years.

In order to ensure that the standard of assessment is equivalent to the same level at a local tertiary institution, an external examiner is appointed for each course. The role of the external examiner is to advise and report on the quality and standard of the continuous assessment component and the final examination of the course.

Quality Assurance

To ensure that the quality of the OLI courses and programmes, hence its students and graduates, are comparable in standard with local tertiary institutions, the quality assurance mechanism includes two major aspects as described below.

Contribution of External Peers

The contribution of external peers involves the appointment of Advisory Peer Groups, External Assessors, and External Examiners.

Advisory Peer Groups

From the outset, each degree programme has an advisory peer group of up to nine people working in Hong Kong in related areas, drawn from the other tertiary institutions and from commerce or industry as appropriate. Working with the OLI academics, the aims of each programme are discussed and a set of courses to meet these aims is agreed. Where an existing course is identified for possible presentation, the group advises on its suitability and any necessary adaptations based on the Hong Kong context. In the absence of an existing course being not available, the group assists in preparing a syllabus so that a special course can be developed. Once a programme and the constituent courses have commenced, the advisory peer group continues to serve and advise on course or programme improvements and review.

External Assessors

If an existing course has not already had an external assessor, or where there are significant adaptations, and when a new course is being developed, the OLI appoints an academic person of high standing in the appropriate discipline to review the proposed final version, either in the form of blueprint or draft copy of the course. This review process assesses the structure, balance, relevance, content level, and pedagogy of the course. The external assessor's interim and final reports must be approved by the Academic Board before the course can be offered to students.

External Examiners

Experts from outside the OLI, usually from other institutions of higher education, are appointed as external examiners. Their task is to ensure the examinations are fairly set and marked. From their experience of degree level courses elsewhere, they are able to judge if the quality of student performance or exit standard is comparable to the other institutions. An external examiner is appointed for each course. After the final examination of the course, the external examiner is required to attend the Award Meeting and comment on the standard of the examinees, the quality of the course, the examination paper, and other observations in a report to the institute for further refinement of the course in future presentations.

Programme Approval

In addition to the scrutiny of individual courses, the introduction and review of all degree programmes are subject to the overall approval of the OLI Programme Review and Validation Committee. This Committee comprises the membership of deans of the schools and three external peers with the power to co-opt additional specialists as required. The main task of the Committee is to ensure that the proposed or existing degree programme is comparable in standard and quality with similar programmes offered by local tertiary institutions. Members of the Committee meet and discuss issues such as the constituent courses making up the degree programme, the duration and method of delivery of each of the courses, and the relevant assessment methods.

The Internal Committee Structure

The OLI committee structure seeks to integrate external advice and evaluation of its internal quality control mechanism while preserving the integrity of the work of each working group. The goal is to ensure that the production and delivery of courses and programmes, as well as the assessment and examination on all the students are carried out in a controlled and uniform manner. Each proposed degree programme has a Programme Team working with the relevant Advisory Peer Group. Each individual course has a Course Review Committee consisting of the academics involved in

the course together with a representative from the Education Technology Centre. School Committees comprising all academics in each school consider, discuss, and recommend for the approval of the Academic Board the proposals for new or revised courses and programmes. The Award Committee for each course will recommend the award of results to students. Official announcement of the examination results will not be made to the individual students unless and until formal approval has been obtained from the Award Committee and the Academic Board. The Course Results Group at directorate level, membership of which comprises representatives of the schools and the director, maintains an overview of the award process on behalf of Academic Board.

The New Campus

At present, the OLI is located in a government office building and the monthly rental paid to the Hong Kong Government is based on the going market rate. Through the generous donations of local charitable and business organisations as well as land being granted by the Hong Kong Government, a new campus is under construction and it is expected to be ready for occupation in late 1995 or early 1996. It will be a purpose-built structure offering all the facilities of a proper distance education institution. By then, the OLI will be able to operate as a financially viable entity without the burden of paying hefty rentals to the Hong Kong Government.

The Future

It is the intention of the OLI, even at the time of its establishment, to gradually upgrade itself to university status. The current OLI programmes have all been validated by the Hong Kong Council for Academic Accreditation, which is a statutory body to validate all academic programmes offered by the local tertiary institutions, other than the three universities, to ensure that the programmes offered by these institutions meet the desired level of standard and quality. The upgrading to university status will not require external validation of its academic programmes and then the OLI will truly enjoy its academic freedom in common with other local universities. With the approach of Hong Kong being returned to China in 1997, the OLI, like other local organisations, is trying hard to establish close liaison with comparable institutions in China, either in the form of joint venture or co-operation in order to market its programmes and qualifications to the people living and working in the mainland.

Conclusion

It seems that the OLI, being a relatively young institution, has plans to further expand its activities, not only in developing new programmes to meet the growing demand for a variety of disciplines and qualifications (such as the introduction of sub-degree and higher degree qualifications), but to compete for a bigger segment of the current market and to explore hitherto untapped markets. The Hong Kong Government initiative to regulate the provision of distance education, as stressed by Lee & Lam (1993), is a long-awaited move to protect the interests of the consumers (i.e. the fee-paying students). Students have the right to expect value for money by way of quality education and efficient support services, to which they are fully entitled, being offered to them. However, in order to gain a strong foothold in this competitive environment, the OLI has to face and tackle a lot of challenges in the short and medium term.

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Author

James Y. W. TONG, Senior Lecturer, School of Business and Administration, The Open Learning Institute of Hong Kong

Team Development: A Multidimensional Approach

Allan Walker
Chinese University of Hong Kong

Kenneth Stott
Middlesex University, UK

The management of education is currently preoccupied with the notion of collaboration and co-operation - people working together for the good of the school. Much of the rhetoric about shared effort refers to and promotes the use of teams. There is a tacit assumption, however, that increased performance will be an automatic consequence of team formation. Little consideration is given to the need for continuous development of teams. Unless teams are thoughtfully constructed and skilfully developed, collaboration and responsiveness may be simply an illusion. Team development is concerned with having the right individuals with appropriate skills, with systematic approaches to task accomplishment, with effective interpersonal and communication processes, and with a high degree of support from the school and its management. In other words, it has to be seen from a multidimensional perspective. After discussing briefly the research into team development and its associated problems, we attempt to demonstrate that such development necessitates a diagnosis of problems affecting performance in several areas or dimensions.

Much has been written about the changing face of the environment in which modern organisations, including schools, must operate (Caldwell, 1993; Dimmock, 1995). With such environmental conditions in mind, there is little dissent in the literature from the view that schools must develop cultures and accompanying structures that incorporate change as a constant part of organisational life (Fullan, 1993), change that can lead to a revitalisation of schools.

Changes in schools reflecting new approaches to governance and structure include the decentralisation of certain managerial functions to schools, a push toward greater parent and community involvement, a growing awareness of teacher professionalism, and an insistence that the management of learning is the touchstone of all policies and practices (Ashenden & Milligan, 1993). Decentralisation to a school level has been accompanied by demands for schools to be more responsive and flexible internally as well as externally, and this, in turn, has spurred a search for structures and ideologies which allow such conditions to emerge. Much of the current restructuring, such as through the School Management Initiative (SMI) in Hong Kong, revolves around a quest for innovations that meet changing demands. These are, without doubt, dominated by strategies for increasing teacher participation.

One way of expanding participation is by increasing the opportunities for teamwork. Multiple forces have generated an interest in team approaches, and these have been applied to management, organisation and teaching in schools. This paper discusses the important participation and restructuring strategy of widening the use of teams (Walker, 1994; Walker & Stott, 1993), a strategy supported by many. In a report commissioned for the National Industry Forum in Australia, Caldwell (1993, p.40) emphasises the importance of teams to 'self-managed' schools:

> In exercising authority, the principal should be guided by the unambiguous findings of research on leadership and management in virtually every set-

ting in the public and private sector, namely, there should be appropriate consultation with stakeholders, and much planning should be carried out in teams, at the management level and among staff in their areas of interest and expertise.

Teams are being promoted, in many cases, as a way to make our schools 'collaborative' and 'responsive'. That may be an over-simplistic view. Unless such groups are thoughtfully constructed and developed, collaboration and responsiveness may be an illusion.

In this article, it is the development aspect to which we address our attention, for it is our contention that, if teams really are part of a vital organisational strategy, they need also to be part of a coherent development process. There has been little coherence to date. Even the literature on team building and team development has been constrained by an over-emphasis on single effectiveness foci: our argument is that there are several areas of effectiveness and that these are interrelated.

Thus, we present a model that includes all these areas - what we call 'dimensions' - of team development and one that explains how the various pieces of the jigsaw puzzle fit together. These pieces - our model has four - represent the different foci that development efforts might address. Before we outline this multidimensional approach, we discuss several issues that relate to teams and their development. We examine first some of the problems with the research that has been conducted in an attempt to determine the effectiveness of teambuilding strategies and interventions. Such research should give us clues into what should be the focus of our attention in terms of development. As we shall see, what limited research has taken place has been problematic. We also examine some pressing difficulties with team development itself. It has, for example, become associated with single interventions, not all of which are related to real needs. Finally, we consider the widely neglected issue of the target of development efforts. Should it be a building of performance within the team or between organisational teams? While considerable attention has been afforded to the former, the way that teams collaborate in predominantly competitive environments has received comparatively limited treatment.

Research into team development

If considerable resources are to be channelled into organisational teambuilding efforts, what evidence is there to confirm they really work? It is surprising to discover that, in some cases, vast amounts of money are pumped into teambuilding activities, but without any commensurate attempt to establish the true extent of effectiveness.

It is difficult to make assertions about the link between development activities and performance for two key reasons. First, there is no universally accepted definition of teams, much less teambuilding or team development. It is not possible, at present levels of understanding, therefore, to refer to teambuilding as if it were a standardised activity. Second, what research has been conducted is methodologically weak, a situation exacerbated by the absence of a satisfactory definition.

One of the few exceptions to this criticism may be Eden's (1985) field experiment, in which experimental and control groups were used to test a team development intervention, but even that had a serious flaw by not employing any rigorous criterion of objective performance data. The predominant way of documenting interventions has been in the form of anecdotal evidence and simple reaction measures. For example, the success of team development episodes has been, and still is to a large degree, judged on the basis of participants' remarks (invariably supportive) following the intervention. Such remarks are powerful: they confirm decision makers' wisdom in choosing the intervention. Whether it leads to performance improvements over time is an entirely different matter.

Another problem has been the context in which research has been conducted. Experimental work with heterogeneous groups working under laboratory conditions (Wynn and Guditus, 1984, p.112) is usually far removed from the real context. For example, we may wish to understand the relationship between co-operation in teams and performance amongst groups of school administrators (the Senior Management Team) who are dealing with complex managerial problems. Under these conditions, it may be difficult to transpose the findings of empirical research to the complexities of the actual context.

Yet Another problem evident from the research is the prevalence of vague reporting (De Meuse and Leibowitz, 1981, p.359). Details about the precise activities implemented are not given, and, often, other important items of information, such as sample size, personnel involved, and the time frame of the research, are not recorded. This last weakness is an important one since little research is available into the long term effectiveness of team building interventions (Horak et al., 1991, p. 70).

Returning to our first point, it may be argued that a critical factor in improving the state of research into team development is arriving at an agreed definition of the intervention with standardised activities. This, however, is unlikely to happen and it may be inadvisable anyway, since the diversity of approach is both its strength and its attraction to those who demand its benefits. We now look more closely at problems with team development.

Problems With Team Development

There are several problems that have emerged from the practice of planned team development. The first concerns the 'events' that take place. In some ways, the word 'intervention' when applied to teambuilding can imply a misleading note of finality. It should be seen as a process rather than an isolated activity (Huszczo, p. 1990).

A second problem is the nature of the event. Games and exercises feature prominently in teambuilding training programmes, and people often remember these vividly. Teire (1982) sees advantages in moving away from the organisational problem context, because members often 'can't see the wood for the trees.' But exercises soon become the prime focus and an end in themselves. Surely, they should supplement, rather than replace, realistic development activities.

A further problem relates to the consultants and facilitators who generally lead training events. Adair (1986, p.139) observes, somewhat alarmingly, that teambuilding may have more to do with their (the facilitators') needs and values, rather than with an analysis of what the team really needs. From this, it is obvious that a rigorous assessment is needed of whether team development is necessary and, if so, in what areas it is needed.

This is an important point, for, not only should team development ensure an adequate level of all round performance, but should also concentrate attention on the particularly weak areas. For example, if relationships are good but the team never completes tasks on schedule, what is the point of spending time and effort on enhancing interpersonal harmony. Our model below addresses this very issue.

Yet another problem is that team development is often treated as if all teams were the same and with the same level of experience. We see this as a serious flaw and argue that team maturity must be a factor to consider in planning development. Again, this appears as a feature of the model.

Intra- And Inter-Team Development

The emphasis in teambuilding is generally directed at improvements within the team; improvements in relationships, in conflict resolution, in decision making and so forth. What about the way the team operates with other teams? Barner (1989, p.47) appropriately distinguishes between 'intra-team building' and 'inter-team building'. Inter-team building efforts concentrate on the interface issues between teams, the problems that they might face in relations because of interdependent functions and responsibilities. Such issues might include the need to increase the understanding amongst teams of their respective missions, priorities and roles; of the ways in which they might service and support each other; of their interactions in working with external customers and suppliers; and of the application of common work procedures across interdependent functions.

Many organisations are now making advances in this area. Some schools have brought teams of administrators together with teams of teaching staff to plan ways in which they can co-ordinate their efforts more effectively and utilise their respective skills. Similarly, curriculum teams are working with other teams to avoid duplication of effort and to seek ways of optimising resource provision.

A Broad-Based Approach to Development

So far, we have observed only a confused picture of team development. The research has yielded little of value and there are serious problems with the way teambuilding is seen by school leaders. This is due largely to an undue emphasis being placed on single effectiveness emphases of teams. In particular, there has been a distinct preference for improving the personal relationships amongst members of teams. Yet, where does this get us? What evidence is there to suggest that engendering cordial relationships automatically leads to improvements in task performance? It is obviously important to ensure a satisfactory level of harmony, but there are other factors to consider. For example, even the highest level of friendliness is of little consequence if the organisation has an intensely competitive reward system that pitches individual against individual. Thus, development has to be more than the simple extension of entente cordiale. The complexity of teams is such that a broader approach to development is needed and that is why we advocate the adoption of strategies that incorporate several dimensions or areas of development. The approach we describe explains it is possible to effect integration amongst the different dimensions.

The basis of the model described below stems from a distillation of the available literature on team development in organisations, with an attempt to integrate various foci or emphases; from several episodes of small-scale research in the field; and from intuition and experience of both individual and team development.

The model has five major propositions:

1. Team development is best seen as a multidimensional construct, where the conditions in one dimension critically affect the conditions in other dimensions.
2. For effective team development to take place, attempts must be made to consciously optimise the conditions in each dimension.
3. Teams need to identify those dimensions that are in need of attention and to employ appropriate development strategies. Performance will depend on accurate diagnosis.
4. Relative emphases in dimensional development will be determined in part by the development level of the team.
5. Responsibility for team development should lie largely with the team itself.

Before these propositions are explained, an explanation of some of the terms used will be helpful. We have used the word 'dimension': this refers to an area or focus of development. For example, developing interpersonal relationships would fall in one dimension, whereas attempts to improve decision making skills would fall in another. We have chosen to call these dimensions: 'individual', 'task', 'team', and 'organisation'.

The first proposition suggests that these dimensions are inextricably linked and that it is unrealistic to see them as discrete teambuilding foci. They each have a significant impact on the other. If, for example, interpersonal relations are unsatisfactory, it is argued that this might have an important effect on task performance and accomplishment. Conversely, if the team is unsystematic in its efforts to process tasks and thereby experiences little success, team morale and relationships amongst members may suffer. Again, if the school principal commends one team member on success and not others, showing no organisational support for collective effort, this will inevitably impact on cohesion, task performance and relationships.

The second proposition states that teams need to have satisfactory conditions in each of the dimensions. This is supported by Buller (1986, p.156): "Teams that address multiple forces (that is, task, interpersonal, organizational, and so on) may outperform teams that address only one set of forces such as task or interpersonal." The argument here is that an acceptable level must be reached in each dimension. If relationships are good, task performance of a high order, and the skill mix in the team right, there may be impending problems if the school has no processes in place for supporting teamwork. There must be at least a threshold level of support.

The third proposition, which is closely linked to the previous one, implies that teams must give attention to dimensions 'selectively'. In other words, it is inadvisable to employ development strategies across the board. Some dimensions will need more attention than others. The team's success, therefore, may hinge in part on identifying needs accurately and applying development efforts to the right dimensions.

The fourth proposition is that the variations in development needs may be attributed partly to the level of devel-

opment (or maturity) of the team. Team membership composition obviously has an impact on team development needs, but the degree of maturity of the team as a group is a factor that is often overlooked.

The final proposition assumes that the team itself is often in the best position to identify and decide upon its own developmental focus. Although this does not exclude outside assistance, advice or analysis, we hold that if teams are to develop on a continuous basis and are to be responsive to an unpredictable environment, they should be encouraged to take charge of their own development. We now return to the concept of dimensions.

The Four Dimensions

Using four categories of development areas is only a convenient way of directing our thoughts. The dimensions are not mutually exclusive and, indeed, we have found no framework of team development in the literature that satisfactorily separates areas. This is because the activities that contribute to a particular aspect of development within any given area are often related to improvements in other dimensions. For example, if attempts are made to elevate the motivation levels of individuals (we have included that activity in the 'individual' dimension), the effects may be felt in the team (the 'team' dimension) and there can be a considerable impact on the quality of task accomplishment (the 'task' dimension). It is necessary, therefore, to accept large areas of overlap amongst the dimensions. The model, therefore, is a holistic, integrated one.

Despite the inter-relatedness, the activities within dimensions are more likely to have a major impact on their own dimensions. For example, by concentrating on development in a number of task dimension activities, the greatest effect will be on improvements in the way the task is carried out – the 'task' dimension.

Buller (1986, p.157) produced a four-factor model that describes the relation of team building to task performance. We have extended the model to incorporate more items within each factor area. Some of these items may be critical to success. We have also added a temporal or maturity dimension. Teams may be thought to progress through a series of stages of development. They start off as relatively incohesive and immature (in team terms). Some teams, however, progress to the point of being outstanding in their work. A team that is mature and effective will require different development em-

Figure 1 An Extended Model of Team development
(Source: Adapted from Buller, 1986)

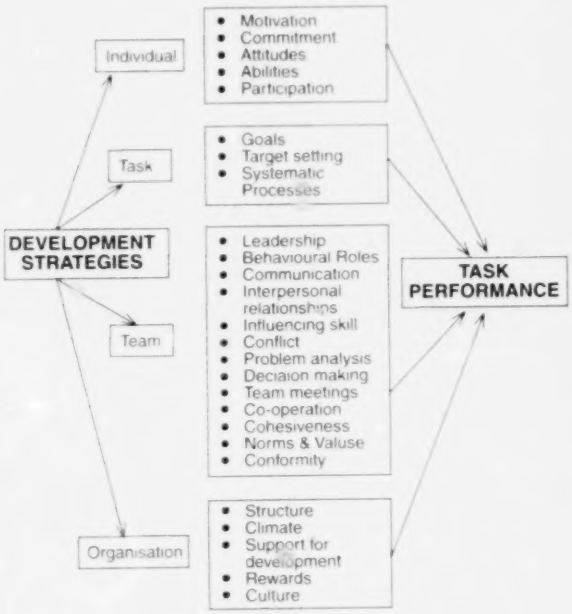
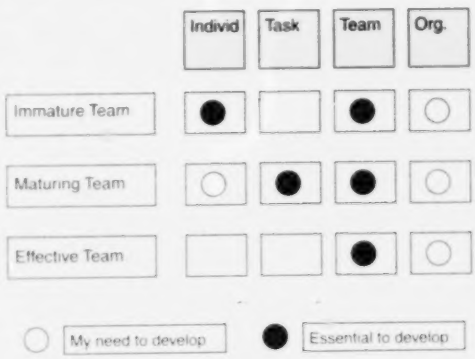


Figure 2 Model of Team development Emphases According to Team Maturity Levels



phases to one that is newly formed. The model accounts for

these differences and suggests those areas that might need most attention at any given stage. The list of dimensions and items is shown in Figure 1 and the model is shown in Figure 2.

The multidimensional model we present, by taking a holistic view of team development, follows the approach adopted by Buller (1986, p.156) and "enhances the likelihood that the team will identify and solve critical debilitating problems, and thereby function more effectively. Moreover, by developing a general problem solving capacity within the team, the problem solving approach may foster continued performance effectiveness after the formal team building intervention is concluded."

You will recall that our final proposition in the model was that teams should be responsible, in large part, for their own development. Whilst consultants have played a prominent part in diagnosing problems, we are advocating a broader approach in which teams diagnose their own needs and then plan strategies to improve performance. Arguably, the most worthwhile development comes from the team itself and not from outside. Teams should aim for internal and external relationships that encourage constant learning and development within the team and, as far as possible, this should be self-guided. Of course, appropriate development efforts depend on accurate diagnosis of critical problems.

Diagnosis

In the diagnostic approach, the team identifies problem areas, gathers data to aid the process, then devises strategies to reduce or remove the deficiencies. By attacking the major problems, the process is economical. Unnecessary effort is not expended on those dimensions that provide little or no hindrance to effective performance.

As we mentioned earlier, many team development episodes are led by expert consultants who have preferences in terms of a teambuilding focus. There is little diagnosis. Consequently, problems may be tackled that don't really exist and teams end up with a narrow range of skills, usually in the interpersonal area.

Tolle (1988, p.279) appropriately questions whether the improvement of interpersonal competencies amongst management teams will really impact on the operational performance of the organisation. He goes on to note "anything further than this is pure happenstance unless diagnosis of the organization's ills has determined the cause to be the underdevelopment or use of interpersonal skills among the team members. Otherwise, the organization with operational problems before team building will likely have many of the same problems after team building except that the team members will behave in a more friendly and co-operative way."

Consultants' preferences explain one reason for inaccurate or no diagnosis. There may be other reasons. For instance, conflict may be stirred up when the more searching diagnostic questions are asked. Also, those involved in directing development may not possess the skills to engage in data gathering and analysis.

Diagnosis should be part of a regular pattern for the team. Especially in permanently formed teams, there should exist a 'challenge' mentality. Members should be scanning continually both the internal and external environment in an effort to predict and identify problems or challenges. In terms of development, diagnosis can be seen as crossing and including task, individual, group and organisational dimensions depending on the needs of the team. Constant scanning and diagnosis allows problems to be identified in one or more domains, thereby facilitating development planning.

Conclusion

We have attempted to demonstrate that team development necessitates a diagnosis of problems affecting performance in several areas or 'dimensions'. Accurate diagnosis ensures that development interventions are economical and productive. At the same time, development should ensure at least adequate levels of performance in all dimensions of the team's operation. A further consideration in any diagnostic process must be the development or maturity level of the team. More mature teams are likely to need development in certain dimensions. While the diagnosis of problems from outsiders may be useful on occasions, the team should take responsibility for its own development: this is the only way of providing for long term effective development and performance.

Team development is concerned, amongst other things, with having the right individuals with appropriate skills, with systematic approaches to task accomplishment, with ef-

fective interpersonal and communication processes, and with a high degree of support from the school. In other words, it has to be seen from a multidimensional perspective. Only by integrating these perspectives, we would argue, can true development take place, development that might lead over time to worthwhile improvements in team and organisational performance.

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Author

Allan Walker, Lecturer, Department of Ed. Admin. & Policy, The Chinese University of Hong Kong
Kenneth Stott, Senior Lecturer, Middlesex University, UK

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從『三國志』的歷史個案探討小學校長可供參照的領導與管理策略

陳靈熙
香港布廠商會公學校長

The investigation of the management technique and leadership strategy a primary headteacher should possess through historical events of the ancient China during the second centry.

The purpose of this paper is to investigate the ideal quality a primary headteacher should possess through a critical analysis of eight historical events which happened during the second centry (220-280) in ancient China by some of the concepts and principles on management and school transformation theory of the western world.

（一）背景

（二）研究意義、局限與方法

（三）主要參考文獻

（四）『三國志』內容概要

（五）『三國志』歷史個案分析

以下本文從「三國志」中選出六個歷史個案分析，且對小學校長領導與管理的借鑒意義與看思。（註：有關原文引述，請參閱附錄一）

1．「三分天下」

建安十二年，劉備積極地向諸葛亮討教復興漢室之道。孔明對劉備謙虛的態度頗爲欣賞，於是發表了他思索已久的天下經綸的構思，分析天下大勢提出他的戰略大綱：

（一）董卓之亂以後，曹魏實力倍蓰。加上擁戴漢室，名存正統。短期與之相爭，不易取勝。

（二）吳國除了地利險阻之外，由於長達兩代的優良治績，人民對政府都很擁護，有能之士眾出，與之相爭，勝算卓微。

（三）西方的益州，在東方和北方分別與吳和魏的境界相接，目前爲劉表所有。然劉表老弱軍少，最宜進軍佔領。由荊州沿著長江上溯至西，將達有天府之稱的四州。該處乃一無盡的資源地帶。該地和荊劉璋爲一脈相承之業，素爲益州人民所輕視。該地老百姓莫不引頸企盼外來的英明領導人物前往統治。劉公乃漢王室的後裔，仁德高而重信義，英名已無人不知。況且，屬下更有關羽、張飛、趙雲等當代無與倫比的武將。當今之世，能復興漢王室者，除劉公之外，已不作第二人想。

（四）總結而論，劉公如能先在佔天下三分之一的荊州、益州建立新獨立國，暫時以睦鄰的態度，和魏、吳對抗，積存實力後，再滅魏吞吳，果如其然，統一天下、復興漢王朝的夢想，則不難達成。以上是孔明對天下大勢的基本構思。

聽完諸葛亮的獻策，劉備大爲嘆服。

這就是後世史家傳誦的「三分天下」的智慧策略。

在三國的創業雄主之中，劉備所走過的路最爲坎坷，他無尺寸之地，逐暴宇生，直到諸葛亮爲制定了「三分天下」，確定了先取荊益，先成鼎足之勢，後圖中原的戰略目標，才有了轉機，從而取得一個又一個的勝利，開創了他的帝業。遇到諸葛亮之前，他不是沒有戰略目標，只是抽象：「興復漢室」、「伸大義於天下」，不過是一種空洞的總體追求而已，很難談什麼可行性。是諸葛亮的降中決策，使他的總體目標得以具體化、階段化、現實化了。諸葛亮爲劉備精心設計的階段性目標，是以各觀形勢爲依據，透過嚴謹的分析、全面的綜合，最後才確定下來的。

套用近世西方學校系統變革理論分析，「三分天下」之計可以說是在組織變革之前的長遠計劃，孔明好像早已懂得運用西方系統處境分析（SWOT analysis），他首先分析劉備處境，如內外環境、強項、弱點、機會與威脅，審時度勢，然後定出具體化與階段化的目標計劃，其策略與近世西方管理學理論是不謀而合。

根據美國教育行政學家克文（Herman,1994），曾綜合近代管理學家對學校變革的探討，認爲學校主處於一個動態的環境，科技的一日千里、新法例、新教育制度及社會主要求學生改善質素、內部人力資源的變動、組織問題等等因素，促使學校必須改革。首先學校領導者必須認同改革的需要，與背幹屬員（stakeholders）共同營造目標前景（vision），利用系統處境分析（SWOT analysis），分析學校內外環境因素，訂立長遠策略（long term strategical planning），朝著目標使命（mission）邁進。

世界不停地在變，學校雖然是一種較爲保守的系統，並且體積難與國家相比，但變革方略相若，爲使變革成功，必須一個策略性的長遠計劃。當今香港津貼小學，其在內外因素沖激之下，外有教育政策改變迅在眉捷，內有人事變動隨暈，如何面對問題？如何策劃應變？如何可以在面變潮流中繼續適應和前進？都需要學校同工努力去認識和營造目標前景，才不會落後於他校。

2．「弘毅寬厚」

三國時代，在智謀、武勇、學問、財力、身世等各方面遠較劉備出色者，可說不少，但他頗具領袖的魅力。出道之初，他得到中山大將大張世平、蘇雙等主動資助金錢開拓帝業，就連刺客都因爲受到他的厚待而不忍殺他，可能因爲他是一個活在群眾之中的英雄，受到群眾的擁戴。陳壽形容他是多識廣，意志堅毅，並且包容力強，對有能之士則以厚禮待之，不愧是一個雄正的大人物。他外形俊朗，對朋友有義氣，是具備領袖魅力的條件。

劉備另一個吸引群眾追隨的地方在他的「漢朝再興」的口號，不少英雄豪傑都認同他的目標理想，這種領導方式與克文（Herman,1994）提出的變革領導（Transformal Leadership）有異曲同工之妙，領導者影響

隨從者有共同表變目標心態，個人認同目標便轉化爲整體群衆目標，成爲組織文化之一，變革自然容易成功。還有一個劉備受隨從者擁戴的地方就是他活在群衆之中，魏書記載他與下士同食同坐同寢，近年西方管理學家（例如 L. Frase & R. Hetzel，引自 Sagor,1994）認爲校長宜身在組織裏面，適當地穿梭在[illegible]，提供意見，表示關懷，給予支持或協助，這是一種取得屬白擁戴的良好方法，劉備的親民方式領導具有相當意義。

文文指出領導方式影響學校變革的成效，在衆多的領導模式之中，個人領導，或稱魅力領導（Personal Leadership）最理想，領袖可能是學識廣博，爲人誠實公平，令人信任與愛戴，他可以一呼百諾，胸襟廣闊，容易接納屬白的意見，屬白意見受到尊重，投入感增強，因而發揮團隊精神，達致較佳施行效果。雖然這種領導模式可能有人亡政息的缺點，但這不失是領袖的理想表徵目標。

學校要變革成功，校長不能忽略自己個人素養的培養，大部分的領袖素養，除了相貌外是可生但求的之外，學問的不斷進修與品格的不斷提昇都是可以從後天改善的，只有這樣的校長才能得到同事的擁戴，只有這樣的校長才能引發學校的凝聚力，爲學校的變革營造條件。

3．「三顧之禮」

建安十二年，正在物色傑出英才的劉備，聽到諸葛亮乃大開卷可多得的奇才，於是老遠從荆州來到南陽，企圖面晤諸葛亮。如此一再造訪，到第三次才達到目的。劉備當時四十七歲，年長二十七歲一年輕的諸葛亮深受劉備的誠懇向學態度感動，於是決意效犬馬之勞，除授「天下三分計」大戰略外，更表露了效忠之志。

英國倫大教育系行政培訓主任摩利士（Everard & Morris,1985）指出人力資源對學校變革的重要性。教育最大的投資爲教師，不過人有靈性思考，其工作表現受個人信念影響，因此，如何甄選良好教師非常重要。但是如何網羅人材用要僅人性需要，馬斯洛（Maslow,1943，引自 Hopkins,1993）認爲人性有五種層次的需要：生理、安全、社交、自尊和自我實現，有些理想較高的人對自尊與自我實現的需要非常殷切，如果這種較高層次的需要得到滿足，其效忠信念便會強烈。一些中國歷代領導人的禮賢下士作風，往往收到屬白矢志效忠的效果，便是利用滿足激勵人性的較高層次的需求退求。例如劉備的「三顧草廬」禮下諸葛亮的手法，便是充分掌握人性喜歡被尊重，因而達到獲得賢能襄助的目標。

在學校變革過程中，特別需要有能力的骨幹屬白的幫助。其實，如何補充九七之時資深教師的流失，值得思考。根據研究所得，一些在營運上尊重教師的書時小學校長，往往能夠主動成功，把別間學校的金牌教師禮聘到自己學校服務，這就是禮賢下士所產生的效果。

4．「唯才是舉」

在三國的歷史上，曹操的成功大部分歸功於他的用人策略，他處心積慮的收攬人心，即使是原來敵對分子或是有缺點的人，他都會重用，例如我將魏神，他生擒之而釋其縛；采自袁紹部下的荀彧，曹操把他視作他的張良，重用已久張良，登基，陳壽評他用人各展其才而不念舊惡，深信荀彧拿病體他一明達不拘，唯才所宜。

曹操用人重才不重德，例如荀彧和毛玠等，都是要名聞遐邇的陰謀家，但是，曹操還是重用他們爲重臣。他認爲，只要領導者有才幹，社會有秩序，部屬即使有野心，也不敢妄我；反之領導者昏庸無能，社會動盪不安，就是沒有野心的人也會起而叛亂。所以，只要領導者有統御部屬的能力，不管介意部屬的處行如何，只要他們具有才能，就可以重用。曹操就是如此的唯才是用，所以能網羅大部分的才智之士爲己用，也因爲他們貢獻智慧，曹操才能成就霸業。一些日想要成功的領導者，是否應該學習曹操的手法，任用多樣性的人才爲自己做事呢？

學校是教育場所，對爲教師的品德行爲不良者要不適合重用，但是選取多樣化的人才，對改革就非常關鍵性。例如要推行學校管理新措施（SMI），行政電腦化，就必須有懂電腦操作的教師；籌辦家長教師會，就必須有擅外交詞令的教師等。有缺點但有可用之才的教師，校長如能適當地領導，或許可以改造成才，幫助學校發展。「唯才是舉」給我們的啓示是校長首宜發掘各教師的長處，然後將他們的長處運用在學校相應的關節上，自然能產生良好的作用。

5．「吳下阿蒙」

呂蒙字子明，安徽省人，由於是富國強兵的部將鄭當的遠親，所以幼時就遷居江南，其吳國之中都爲爲的任地。年輕時代的他，原是地方上的小混混，整日喜

7．「眾智事成」

把「衆力」、「衆智」的作用闡述得這樣明確，評價得這麼高，在我國古代歷史上，孫權是第一人。「衆力」和「衆智」詞義雖異，但彼此均兩有相通之處。善能用衆力者必能發揮衆智，即所謂「集體智慧」、「集體力量」，能用衆智者必能發揮衆力，故其力無窮於天下，其智超過所謂大智大慧的學人。

西方管理學家極力重視集體決策(Group Decision-making)，在上世紀四十年代奧斯本(Alex Osborn)發展的「集體腦力激盪」(Brainstorming)一解難(引自 Herman & Herman,1994)，就是充分利用衆智的模式。

「衆智事成」這個歷史個案展示了中國傳統重視「集思廣益」的智慧。孫權表示「衆謀異計」就是要聽取各種不同的意見，現今先進的學校大多強調團體精神和普遍合作氣氛，企圖以衆智和衆力去推動學校改革，開創學校新局。因為這種新路向不單只可以找出較佳的方法和策略性的做法，盡量減少失敗和錯誤，而且可以尋求到大多數成員的共識，既然獲得成員認同承擔責任，自然容易促使學校變革成功。

8．「泣斬馬謖」

建安六年，諸葛亮進擊曹魏於祁山，派馬謖等人駐守街亭，馬謖自恃好勝，不聽諸葛亮的指示，引致街亭失陷，諸葛亮大義滅親，毫不容情將他處斬，將士受下感動，無由也使他們感到羞愧！所謂給予易罰人難，尤其對自己喜歡的人、親人或難得的人下斷然處決，這更是難中之難事。

要把一個組織辦得有生氣、有凝聚力，需要嚴格管理，嚴格執行規章制度，領導者不可因特別寵愛一個人而破壞了組織的規則，制度不完善可以討論修改，修改也不能因人而異，該辭退的就自辭退，以有形成一種氣氛，每個成員都有危機感，主動自覺地約束自己。

泣斬馬謖的歷史事實說明體現諸葛亮面對自己親信的處置態度，這是一個指揮官最基本的素質之一，因為一個組織的章則規條如何嚴密，倘若領導者執法不嚴或不公，或自己感不平，組織日常的運作便會受到阻礙，遑論改革。

此津貼小學存在不良分子，他們或擁有黑社會關係而胡作妄為，校長投鼠忌器不敢執行法紀，他們有此項保護分子，違規措施已定，校長息事寧人，唯有因循苟且。因此，學校要推行改革，雖然原則上應求全體共識，但如有違紀分子，必須採取果斷手法加以整頓，否則學校成長難以建立，而學校整體進度定必受影響。

(六)結語

上述六個從「三國志」歷史文獻發掘的個案，雖然是一幅年代的歷史片段，但對校長的領導與管理策略，事實上存在借鑒意義。因此，行政人員除了研究西方管理學之餘，不妨參考我國歷史文化瑰寶，也許可以從中得著啟迪與啓發。

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作者

梁振剛，香港布廠商會公學校長

附錄

1 分天下

[illegible]

2 厚寬弘毅

[illegible]

3 顧之禮

[illegible]

4 雅才量事

[illegible]

5 吳下阿蒙

[illegible]

6 魚水之交

[illegible]

7 運智成謀

[illegible]

8 竝轡馳譽

[illegible]

教育改革和社會參與——香港經驗

歐陽枝
香港浸會大學

Change In Education And Social Involvement--Hong Kong Experience

Education is very costly especially education of good quality. The traditional face to face within walls of a classroom mode of education have been used for a long long time and it was considered as the only mode to provide quality education. This paper examines the structure validity and reliability of the "Quality Assurance" system applied within traditional education. It attempts to elucidate the possibility to maintain this same spirit of quality assurance in the Continuing Education mode of implementation, while cutting down the costs through social involvement. This paper analyzes data derived from the actual experience of being the management institute for an in-service B.Ed (Hons) program for primary school teacher. This paper concludes that a mixed traditional and continuing educational mode could be an alternative in providing quality teacher education with reasonable cost as long as a system of "Quality Assurance" has been established and effective management was strictly adhered to.

一、教育改革

二、社會參與

來，花在小學的支出比前多出1.19倍，花在中學的，則多2.36倍，花在大專的，則多2.8倍。這顯示政府近年來比較著重高等教育的發展。

3.2 在附表二中，統計數字指出香港近十年教育經費佔政府總開支雖然略有增長，由81/82年的14.2%到90/91年的16.9%，增加了2.5%，但比起全盛時期的17.5%（86/87及88/89）仍差了0.6百分點。至於香港的教育經費佔本港生產總值的百分比，則可以忽略比前者相差。大致上每年均有增長（87/88年度除外），但仍遠遠低於二個百分比。

3.3 附表三指出一個非常重要的事實，由政府資助的各類學校無論是小學或中學，所花費的資源，都比同類型的學校多很多。以86/87年度為例，官立中學每個學生所得的資源分配便比資助學校及按校中學多出1.85倍。換句話說，同樣的資源，放在官立或按校中學上，可以培養一個中學生，但放在政府的中學裡，我們就可以培養一個半中學生。這是一個很複雜的問題，到底是官立學校本錢得成本增加，抑或是官立學校將某些費用轉嫁於學生身上呢？這是一個值得深入研究的課題，希望各先進可以作更深入的探討，給我們一個答案。不過，在這裡我想強調一點的是，在香港富裕社會大元裕之下，政府要大力發展教育，社會的參與，是不容排斥的方法。而持續教育更是政府的另加選擇，這是否意味著教育事業的另一重要改革呢？為就要各教育先進，加以指正了。

3.4 附表四

除非是非常留意教育經費分配的專家，否則我們很難下這一個判斷：香港的教育經費是充裕，還是不足？附表四中，我們可以知道與歐美各國或亞洲鄰近國家比較在教育經費方面，香港是怎樣的一個情況？可惜筆者手頭上找不到中國大陸的有關資料，就美中不足一點說起來，從表中的有關數字，我們知道教育經費在政府開支比例中，與各地比較，其數字是可接受的，但不要忽略了一個重要問題，就是其他各地都要將一個很重要的百分比，放在國防上，相對來說，放在其他方面的支出，便得相對地減少，但他們仍可以把教育經費保持與香港同一比例，甚至有些比香港還要高，可是香港政府並不太重視教育投資，這點可以在同表另一欄中明顯地反映出來，香港在教育經費的支出，祇佔它的國民總生產值（GNP）的百分之二點四（1980）及二點七（1989），遠遠低於其他各地。

三、持續教育的經費來源

3.1 在附表一中，統計數字指出，在九十年開始政府每年花在教育方面的支出，在整體上每年都有相當的增長，若以90/91的支出與82/83支出作一比較，九年

3.5 持續教育的經費

從這四個附表中，所有數字都指出一個事實，政府完全沒有資助持續教育，所以我們說持續教育在香港能得以蓬勃增長，除了得到各大學的行政人員之高瞻遠矚，將持續教育納入大學的範圍，利用有限之資源，回饋社會各人士外，持續教育的成功主要利用種種方法，改革教育模式和社會各方面的資源，開發門下，讓社會各階層充分地參與，實行不同的

[illegible] 1994 [illegible]，指出持續教育的經費來自兩大來源：一、[illegible]大香港，[illegible]，[illegible]社會香港，[illegible]大香港，[illegible]學費，我還在指出，學費的變化很大，[illegible]例如課程的[illegible]時，[illegible]，[illegible]，[illegible]例之高低，[illegible]，[illegible]學費[illegible]等，[illegible]，[illegible]，[illegible]

4.3.3 導師培訓及支援

除了一些自學課程外，其他面授科目主要由社會大學、香港大學、及香港教育學院之全職講師或該科目之專家以兼職形式講授。這些專家多來自其他專上院校，或在該領域上有優良表現者（如前教育署長便是我們眾多專家之一）。這些專家雖大部份最少擁有碩士學位，社會大學持續進修學院亦支持了不同的研討會，提供教授成年學員的方法，集訓時的準則等等。

4.3.4 考試及考核

根據社會大學規定，每個課程必須成立一個考試委員會。這委員會由全職講師之代表；校外考試委員之代表；校外評審委員之代表；社會大學持續進修學院院長；香港大學專業進修學院院長；及一位來自教育學院之學術代表等組成。這個考試委員會將負責確保所有科目之評核方法，與其他類似之課程，在水平上最少達至一致。

4.3.5 評估

課程管理委員會定期有豐富課程發展小組，校外評審委員會，校外考試委員會所呈交之報告。除此之外他們亦會抽查學員之試卷，作業，如有需要，他們會在課程大綱，教材，教學等各方面作出適當的更改，以保證該課程之質素。

4.4 成功與失敗之因素

在講師這個課程，我們經歷了持續教育工作者所遇到的重重困難，面臨着一批又一批的小學老師們對我們的努力，而終於有機會申請獎學金，使我們有機會到國外的學府，這份喜悅，把過去的種種辛酸，一掃而空。在上課時，我更可以重溫當年擔任老師時所遇到的困難，與學員們分享我的心得。回想當年，我除了擔任初中課程外，我還負責訓導工作。當時，一般認爲最難教的，是剛從別校轉過來的中一學生，他們初到新環境，加上基礎不太好，追不上別的同學，於是便在班上最生事。但他們本性是非常善良的。每一位老師，通常我都會選擇別的同事認爲最難教的班級，作爲我授課的對象。因爲若是連最頑皮的班級也給我收服了，到負責全校訓導，給各同事支援時，便更具說服力。學生方面，則看校內被他們目爲「四大天王」，「五大金剛」等等頭痛的人，也被我收服得服服貼貼，對著我，更是忠誠不渝。就因爲有了這些實際經驗，當學員提出他們的困難，實際的難題，他們認爲書本上的理論，幫不到他們時，我都能深入淺出地替他們分析，將我以前的經驗，套入他們的環境，供他們參考。雖然不是萬試萬靈，但他們對我的分析，倒很樂觀地去實踐，而解決問題，所以上課時的氣氛非常相洽，大家是討論，分析，而不是像傳統教學般單向地輸出。大家有共同語言，共同經驗，交流便會更容易，授受便容易。

4.5 講師易得，合格難求

由文提及，此課程甚受小學教師歡迎，有些甚至等額也等了一年時間，現在這課程總共有一仟多學員，在招聘合格講師一事時方面，每次所招聘我們收到的應徵信都是多過我們所需的，理論上是一點困難也沒有。但是，由於這課程的特點，學員們都是非常資深的小學老師，一些初出道的博士，碩士在理論層面上，他們是可以應付自如，但一涉及將理論應用於日常工作中時，這是此課程的特色學員便是因爲這特色而報讀），他們便力有不勝，要找到一個具高等學位，而又有實際教授中小學經驗（尤其是初中或小學），本來已頗困難，若還要這人能將教授小學或初中，當作一項事業，而非一份工作，從日常工作中學習，留意，分析，將理論與實際工作相結合變成一家之言，一己之得，從而與學員分享，便變成一項非常困難的事。

4.6 中西文化，如何取捨

我們的講師，他們的學位多數自美國或澳加，甚少來自中國的地方，如大陸，台灣，香港等，他們所學的都是西方外國的一套，當然，若說那是完全不合國情，那是大武斷的說法，但若說可以百分之一百應用於香港的話，那更是騙人的。香港與外地，無論在文化思想，生活方式皆有不同，最重要的是，環境學生的環境，家長的參與，家庭教育等更是相差甚遠，如何將所學的，加以修正，以便適用於香港的環境，何者是無，何者是善，便要看個別講師的功力。

4.7 經驗理論：各擅勝重

要解決這問題，是非常容易解答的，因爲若講經驗，我們的學員都是非常資深的小學教師，相對而言，我們的講師很多都在經驗上比不上他們，若我們祇強調經驗的話，那應該是我們的學員站在講台上，而我們的講師坐在講台下才對。但是，我親見很多博士，碩士，他們祇強調理論，沒有實際經驗，而且非常固執，在課堂上與學員各執一辭，那便非學員之福了。

五、綜合討論及結語

兩年來的經驗，要說的話，相信兩天兩夜也說不完。筆者祇希望利用這些經驗，將教育改革——持續教育的理念、困難等帶出來，以求拋磚引玉，望先進賢達、不吝賜教，將香港及中國各地的持續教育引向更高境界。以香港及中國的經濟情況，若要以有限的資源，發展教育，掃除文盲，培養各行各業技術人材提高國民生活素質，讓社會上廣大民衆參與善用社會上的資源用在「教育」事功上，則持續教育乃是除了傳統教育外，的另類選擇。持續教育的好處是：

(1) 投資少，收獲大，合符經濟原則。
(2) 能充份利用社會上現有之資源，投入教育事功，例如：充份利用日校的一教學設備，於晚間或週末上課；使各行各業的人才，在空餘時間，仍能以兼課形式，爲教育事功，作出貢獻，培訓更多人才。
(3) 較具彈性，滿足學員的不同要求。
(4) 能照顧成人學員之所長，將經驗與理論相結合，使他們更易吸收，更快地將理論運用於工作上，增加生產能力，更具效率及效能。
(5) 上課模式，更多元化，能照顧不同程度，能力，環境的學員。
(6) 能結合各專業團體，海內外大學，共同發展更適合本地需要的課程，打破行業及地區的壁壘，將專業與理論，中西方之優點，相結合，互相協調，互相發展，彼此獲益。

未來的發展

我認爲持續教育未來的路向，套用大家耳熟能詳的口號就是：「面向現代化，面向世界，面向未來」。

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作者
歐陽枝，香港浸會大學持續進修學院行政總監

（一）1982-91 年度教育支出分類統計表

單位：千元（港幣）

	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91
經常性									
教育署									
學前教育	5,388	14,966	24,144	31,204	45,334	51,481	56,465	65,009	81,492
小學	1,703,196	1,671,845	1,942,184	2,146,160	2,375,962	2,544,345	2,847,494	3,263,776	3,975,201
中學	1,572,127	1,734,142	2,045,264	2,318,463	2,756,439	3,072,915	3,647,846	4,289,387	5,276,946
特殊教育	–	207,699	170,333	202,240	230,405	264,633	306,286	367,543	471,592
教師訓練	47,529	60,455	72,686	86,220	102,461	111,671	125,428	147,498	179,215
考上教育	41,806	32,887	20,362	18,078	18,330	18,307	27,986	44,075	54,537
其他教育	43,552	56,796	52,239	56,357	64,852	74,697	100,086	120,236	125,574
行政管理	103,209	116,443	135,349	140,106	163,659	185,200	220,367	259,029	299,494
職業訓練局									
工業及職業教育	128,653	170,841	226,748	295,102	363,458	458,210	539,370	663,092	820,030
大學及理工資助委員會									
大專	924,155	1,037,834	1,401,295	1,632,221	1,865,804	2,022,606	2,432,269	2,966,948	3,571,451
非經常性									
教育署	337,868	274,670	404,308	307,936	312,721	396,447	620,911	620,206	684,042
職業訓練局									
工業及職業教育	1,763	38,488	132,899	138,296	235,621	103,694	77,534	123,094	104,569
大學及理工資助委員會									
大專	133,916	150,540	200,998	157,302	175,753	289,712	724,611	686,261	458,120
總支出	5,043,162	5,567,606	6,828,829	7,531,720	8,738,799	9,593,918	11,726,653	13,616,154	16,102,263

財政年度	教育經費實際支出（單位：百萬港元）	佔該年度政府開支百分比	佔該年度生產總值百分比
1981-82	4,172	14.2%	2.56%
1982-83	5,105	14.3%	2.69%
1983-84	5,758	14.9%	2.69%
1984-85	6,951	17.4%	2.69%
1985-86	7,421	16.7%	2.84%
1986-87	8,531	17.5%	2.84%
1987-88	9,544	17.1%	2.58%
1988-89	11,614	17.5%	2.68%
1989-90	13,340	15.9%	2.72%
1990-91	15,885	16.9%	2.86%

資料來源：（1）政府收支預算案財政司在立法局提交之演詞及附件（1983-84、1988-89、1991-92、1992-93）
（2）香港政府統計局：Estimates of Gross Domestic Product（1966-1991）
（3）香港政府年報

（三）香港各類學校人均資源分配（政府提供資源部分）

（單位：港元）

年度 / 類別	86/87	89/90	91/92
官立中學	11,879	17,179	21,361
津貼中學	7,160	10,383	13,610
資位私校中學	4,164	8,617	13,144
直接資助中學	—	—	13,596
官立小學	6,663	9,298	12,412
津貼小學	4,898	6,843	8,974
幼稚園	194	318	487
幼兒中心	2,564	2,950	3,961

資料來源：香港立法局秘書處

（六）香港與外地教育經費所佔比例比較表

	佔政府開支比例%	佔 GNP 比例%
美國		7.1（1981） 6.5（1988）
英國	12.5（1983）	6.0（1982） 5.2（1989）
法國	16.0（1985）	6.0（1983）
德國	14.5（1985）	5.2（1980） 3.1（1987）
加拿大	17.0（1979）	7.7（1979） 9.0（1975）
澳洲	14.0（1982）	6.0（1980）
日本	19.6（1981）	5.6（1982） 8.0（1989）
南韓	18.9（1979）	4.5（1986）
新加坡		4.4（1984） 4.1（1987）
台灣		4.0（1987）
香港	17.5（1988） 15.9（1989）	2.4（1980） 2.7（1989）

Managing Tutors in Distance Education : Further Issues for Consideration

Kenneth Chao Chee-kwong

The Open Learning Institute of Hong Kong

In the light of the author's practical experience in monitoring tutors in a distance learning institution, being both course coordinator/planner and an academic in the field of organisation and management, further issues for consideration or debate on the best/effective ways to monitor or manage tutors was highlighted drawing reference to various theories and concepts of management.

It is not the intention of the author to advocate any particular approach for tutor monitoring or to demonstrate the effectiveness of any particular management theory. Rather it is the view of the author that valuable insights can be gained from management theories and thinking which may help or guide the administrators of distance education in designing effective strategies and policies for distance learning or traditional educational institutions including monitoring of tutors.

Introduction

In the last issue of the New Horizon Mr. James Tong, my former colleague, published in this journal a commentary on Managing Tutors in Distance Education highlighting various operational procedures or administrative measures in place in the Open Learning Institute of Hong Kong (OLI) for monitoring performance of tutors employed by OLI (J. Tong, 1994). Tutors play an important role in the OLI as they are required to attend tutorial sessions to answer students' enquiries on the subject matter and mark students' assignments. Notable measures in tutor monitoring include inspection visits to tutorials, monitoring of sample assignments marked by tutors and turnaround time of marked assignments etc. amongst other less important ones. In its pursuit for continuous improvement and quality assurance the OLI has now decided to adopt a more vigorous approach to the tutor monitoring process. In the light of the author's practical experience in monitoring tutors being both course coordinator/planner for four years in addition to the dual role of being an academic in the field of organisation and management, human resource management in particular, the author wishes to highlight in this article further issues for consideration or debate on the best ways to monitor or manage tutors by examining the applicability of certain management concepts and principles to tutor monitoring.

The author acknowledges that management theories and thinking is a basic "guideline" for the administrators in the field of adult education and should have long been accepted or adopted by most institutions of adult education. Nevertheless, it is still valuable to point out in what important aspects the theories and concepts can be usefully applied .The article should be particularly helpful to those who recently joined the adult education profession with academic background and training in other fields rather than management or administration.

Contingency Approach to Tutor Monitoring?

In management theory, contingency approach is one of the important perspectives which adds to our understanding that "certain management technique that best contributes to the attainment of organisational goals might vary in different types of situations on circumstances" (J. Stoner and R.

Freeman, 1992: 480). In other words, the manager's task is to identify or find out which method will work best "in a particular situation, circumstances and at a particular time" (J. Stoner and R. Freeman, 1992: 47). With this perspective in mind, it is possible to evaluate whether a particular tutor monitoring strategy is appropriate by careful consideration of the background, environmental and various situational factors.

For illustrative purpose, consider increased inspection visits to tutorials as a strategy to improve tutor monitoring. The relevant issues are:

- What is the main purpose of inspection visits ? To ensure punctuality of the tutors, to make up for the class in case of tutor's unexpected absence, to ask and obtain feedback from students on the spot or to sit-in the tutorial class with students together to evaluate the in-class tutoring skills of the tutors? The relative priority of different objective will clearly dictate the needs/ frequency of inspection visits and whether the inspection should be carried out by an academic staff, an administrative staff or just a clerical/manual staff.

- The above consideration is further compounded by the fact that measurement or assessment of tutor's performance in-class is difficult, if not impossible, by mainly observational visits to tutorials. Tutors' performance during tutorials can be classified as 'university teaching' where it is difficult to prescribe 'standardised operating procedures' (J. Stoner and R. Freeman, 1992: 481) or measurement yardstick. Tutors may themselves adopt a contingent approach and fine-tune their styles/methods of instruction to suit the particular groups of students under their care and it is difficult to assess them relying only on a few visits without adequate knowledge of students' background, learning style and preferences.

- Tutors' expectation and relevant culture also can not be ignored. As professional people especially tutors responsible for higher-level courses, tutors may resent /dislike undue or frequent inspection visits to tutorials (sit-in in particular) by the administrative staff (or even academic staff) from the administration. Tutors may feel that there is lack of trust in them and that their professional competence and integrity is unjustifiably challenged. The important message is that the design of tutor monitoring mechanism must be more or less in line with tutors' expectation and take into account their accustomed culture.

Although presented mainly as academic discussions some of the above issues were actually practical problems confronting the author and colleagues for which decisions had to be made on how best to monitor tutors.

Relational Approach to Tutor Monitoring?

In close connection with the contingency theory of management the situational leadership theory is of significant interest (P. Hersey & K. Blanchard, 1988) which holds that the most effective leadership style varies with the "maturity" of subordinates. "Maturity" is defined as "desire for achievement, willingness to accept responsibility, task-related ability and experience, not "age or emotional stability" (P. Hersey & K. Blanchard, 1988: 173) Viewed in this perspective, there should be different treatment or motivational techniques for new and experienced tutors or tutors that could be at least loosely classified/identified as Theory X or Theory Y employees, in the design of tutor monitoring strategies. According to Douglas McGregor, Theory X employees are those who must be motivated by force, money or praise other than intrinsic nature of the work itself whereas Theory Y employees are those inherently motivated to perform. It is clear that the "matured" or Theory Y employees would require a monitoring strategy based on trust, support and more participative relationship whereas the relatively "inexperienced" or Theory X employees would require a monitoring strategy based on more frequent inspection, regulation and more directive relationship.

The Theory X and Theory Y concepts facilitated the author in making use of it as an additional tool for tutor monitoring. The tutors were classified and the monitoring strategies designed accordingly based on information obtained directly from tutors (such as recruitment interviews, tutors' experience/ background), author's own observation and feedback from students.

Apart from the obvious advantage of saving time in reducing some unnecessary inspection visits to Theory Y tutors to ensure punctuality etc, the author was pleased to report

that the overall motivation and performance of all tutors (both Theory X and Y tutors) appeared to have improved (judging from students' feedback and author's own observation on scriptmarking and in-class performance etc) because of the author's discriminatory approach! It was most likely that the positive findings were caused by the increased attention of the author with different focus geared to the different needs (or inadequacies) of the two types of tutors. For the X-type, they were found to welcome more guidance and advice whereas the Y-type revealed that they welcome more encouragement and participation but some of them were not very receptive to close supervision and monitoring.

Notwithstanding what has been discussed above about the relative emphasis on the use of different monitoring strategies (or motivational technique) for monitoring different categories of tutors, the need to maintain and foster high-quality satisfying relationship with all categories of tutors is the same and of paramount importance. The role of relationship in successful marketing has in the past few years become prominent and recognized as "potent source of competitive advantage" (D. Ballantyne, 1994: 4) which emphasized on "people and processes to build on-going relations with customers, distributors', suppliers etc." It is the view of this author that quality relationship is at least as important in tutor monitoring as in marketing, if not more significant. In a distance-learning institutions such as the OLI, students are our customers, and tutors can be regarded as our agents, distributors or suppliers of knowledge. In the light of the author's experience, major potential benefits of a high-quality relationship with tutors include the following:-

- Good relationship and trust encourages communication. Tutors would be more willing to provide useful and honest feedback on course materials, students' performance and reactions and other matters related to tutorials without need for defensive behaviour or fear of being seen as offensive.

- Tutors would also be more self -disciplined (in keeping of time, marking of assignments etc.) and motivated in the course of carrying out their duties. The report/relationship established between the tutors and their supervisors, in this case the authors, would be an effective internal driving force for the conscientious tutors to carry out their duties in a professional manner so as not to betray the relationship established between them.

- Tutors would also be more willing to help and take up additional work in case of emergencies. An example being the case of sudden/unexpected absence or delay of a particular tutor in attending tutorial session other tutors holding another class at the same venue and time would be happy to take over the group of students of that particular tutor although without additional benefits, financial or otherwise. The satisfying relationship established with tutors may facilitate or contribute to better relations amongst tutors themselves. On the other hand it may also lead to development of a culture where self-monitoring and mutual cooperation is a norm which undoubtedly is helpful to their supervisors - in this case the author.

Strategic Approach to Tutor Monitoring?

In management one of the definition of 'Strategy' is "the pattern of the organisation's response to environment over time" (J. Stoner and R. Freeman, 1992: 194) taken into account resources available at its disposal and the strengths and weaknesses of the organisation. In a broad sense the contingency approach and relationship approach described above can also be classified or considered as a kind of strategic approach as both approaches would need careful scanning of the environmental factors, consideration of appropriateness of a tutor monitoring design and deliberation on resource issues. In particular relationship approach relies heavily on the feedback, self-control and goodwill of tutors to relieve the administrative burden of the administrators (i.e. authors in this article) to impose frequent check and inspection which would not be so important if there is ample resources available for disposal by the administration.

The author would like to highlight two more important but inter-related management concepts to demonstrate the usefulness of taking a strategic approach in tutor monitoring/control - identification of key performance area and strategic control points. In tutor monitoring key performance area refers to aspects of their work which reflect good quality of an ideal tutor and strategic control points refer to the critical points in a certain key performance areas " where monitoring or information collecting should occur" (J. Stoner and R. Free-

man, 1992: 607) in order to check performance and ensure standards. For example, if one of the key performance area is skills in leading tutorials or facilitating discussion strategic control points may be tutors' actual performance during tutorials for which checking on tutor's punctuality is clearly insufficient. Observation of tutor in-class, by sitting-in may also be insufficient by itself as the so-called Hawthorne effect may be at play and the tutor may have rehearsed very hard before the visit to give an exceptional performance, or the tutor may become so nervous that the show is below average! As a brief illustration, a comprehensive approach was adopted by the author and OLI to monitor tutors. The general control points would include checking on punctuality, in-class performance and monitoring on tutors' assignment marking standards. Statistical reports for each assignments were also generated to compare average assignment scores and score distribution of each tutor group so that lenient or severe tutors/markers can be identified and improvement or deterioration over the course duration can be monitored. However the critical control points for each tutor varies as their strengths and weaknesses (or 'competencies') differed. Having identified the strategic and critical control points it is possible to devote more efforts on the parts which would need improvements and to save efforts on those aspects which were already good enough. For example a tutor may be weak in 'in-class' performance but not time-keeping or assignment marking so more efforts could be focused on how best to help this tutor in delivering lectures or tutorials.

It is not possible without describing at length or involving minute details how strategic approach can help in tutor monitoring. It is also not the intention of the author to do so. The point is that the example shows clearly that, to be effective in monitoring tutors, careful identification of key performance areas and selection of appropriate checking points (or control points) is important as otherwise valuable resource may be wasted and the result or data/information gathered may not be reliable or reflect the whole situation.

Conclusion

The paper has highlighted some management concepts and principles for debate or consideration by distance education administrators in designing of tutor monitoring strategies. It is not the intention of the author to advocate any particular approach for tutor monitoring or to demonstrate the effectiveness of any particular management theory. Rather it is the view of the author that we can gain some valuable insights from management theories which may help or guide us in the administration of distance education including tutor monitoring, and we should not overlook the possible contributions from the wealth of management thinking and ideas which can be applied to distance education as well.

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Author

Kenneth Chee-kwong CHAO, Management Strand Programme Leader, School of Business and Administration, The Open Learning Institute of Hong Kong.

中學“循環日制”時間表的探討：

賈國強
中文大學教育學院

黃偉強
迦密柏雨中學

Review of Cycle Timetabling System in Hong Kong

In the past 20 years, cycle timetabling system has gradually become the dominating practice in the secondary schools in Hong Kong. This article tries to get into the details of this system, including its advantages and disadvantages when compared with the traditional weekly timetable system. Other alternative methods are also suggested to avoid the defects of each system.

前言

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表一：所行「七日循環制」中學的中二上課時間表

日次 節數	1	2	3	4	5	6	7
1	英文	英文	科學	集會	音樂	數學	科學
2	地理	中文	數學	集會	經工	英文	科學
3	班主任堂	經工	中文	中文	地理	中史	中文
小　　息							
4	數學	音樂	地理	英文	英文	中文	中史
5	數學	中史	電腦	英文	科學	中文	英文
午　　膳							
6	科學	聖經	數學	數學	數學	數學	中文
7	西史	英文	西史	中文	體育	科學	西史
8	中文	中史	英文	聖經	體育	英文	英文

表二：所行「七日循環制」中學的校曆表

	日	一	二	三	四	五	六
六月份				1 20- III	2 IV	3 V	4
	5	6 VI	7 VII	8 21- I	9 II	10 III	11
	12	13	14	15 IV	16 V	17 VI	18
	19	20 VII	21 E	22 E	23 E	24 E	25
	26	27 E	28 E	29 E	30 E		

* 20- III：第二十個循環的「日三」
* 13/6,14/6 假期
* E — 考試

這所中學，每日上課八節，一個循環七天共上五十六節。而參考其校曆表，羅馬數目字 I、II、……等代表「日一」、「日二」、「日三」……如此類推；20- III 代表六月一日星期二是上「日三」的課，循環次數已經是第二十次。當遇有假期的時候，循環日數會順延（這也是行循環日制的其中一個優點，下文將會論述）。

香港各中學採用不同類型時間表的統計

循環日制時間表看來頗為繁複，但對於許多在香港中學任教的老師絕非陌生；因為根據筆者研究所得，約有三分之二受調查的中學正在實行循環日制（見表三）。這個制度對學校行政效率、教學效能及校內師生的生活有很大影響，也是筆者要探討這種編制的原因。

研究資料主要是來自二百八十九間中學，約佔全港中學數目的七成，故數據應相當具代表性。

表三：香港各中學不同類型時間表編制的比較

	數目	百分比 (%)
循環制	190	65.7
星期制	99	34.3

表四：「六日循環制」和「七日循環制」的比重

	數目	百分比 (%)
六日循環制	178	93.7
七日循環制	12	6.3

從這簡單統計中，可見循環日制時間表已經成為香港中學的主流時間表編制。為何在七十年代中期由某些教育行政人員所試行的制度，竟能在二十多年間風行大半數的中學，而外國的教育界中卻難找到知音的資料呢？

「循環日制」的優點：

（一）在傳統的「星期制」中，學校假期並不是平均地分佈在一星期的五個上課天中，以致同一級內各班的進度並不一致。循環日制因擺開假期不理，順延上課的日數，故此能避免上述的問題，達致進度一致，沒有任何學科的教師因放假而「相對地」損失了。

（二）彈性較大：「六日循環制」比「星期制」在時間表上多出了六個位（假定每天有六教節），除了可按比例增加某些科目的教節外，學校可因應其需要，作以下一些調動：

1. 倘若學生的語文程度較低，可藉改行「循環日制」，多編一些教節，使該科的上課時間相對地增加。

2. 反過來說，若要刪減某些科目的教節，騰空作別的用途，（在「循環日制」中對這項行政措施的容忍程度可較為寬鬆）筆者嘗試用以下兩個例子，簡單地說明出來：

例一：根據課程發展議會（1993）所編定的課程，英文科每週授課數7至8節，假如延伸至「七日循環制」，而每天上課的節數是不變的話，教節應該按以下方式計算：

「七日循環制」的教節 = (7 – 8) x 7/5*
= 9.8 – 11.2
= 10 – 11 （四捨五入）

* 「六日循環制」用乘6/5。

如果因某些理由，要將英文科減去一節，在「星期制」中由7減至6節，轉變非常明顯和誠懇，從計算可得，它的教節減少百分比 = 1/7 x 100% = 14.3%
這項行政措施能獲得的支持度相信非常低。然而，若在「七日循環制」中由10節改為9節，它的教節減少百分比 = 1/10 x 100% = 10%
在情理上，英文科老師可能會較容易接受。

例二：如果要刪減減科的教節，這個方法更是奏效。音樂科每週的上課時間一般是1至2節，當轉行「六日循環制時，按前文所列的比例式計算，它的理論教節 = 2 或 1 x 6/5
= 2.4 或 1.2
= 2 或 1
經四捨五入後，音樂科的教節或許不加即減的事實，而一般老師也會覺得，音樂科或其他減科減少了一些教節，問題不會太大。

以上兩個例子，說明一個事實：當學校轉用「循環制」的時候，各科教節能重新分配，對於行政人員來說，可以較為容易推行其理想的教學模式。

（三）如前文所述，當轉「六日循環制」後，時間表上多出了六個位，除了某些科目的教節按比例增加或減少外，也可以從中抽取一些教節，作為「非主流課程」（非傳統課程）之用，例如班主任課、公民教育、性教育及通識教育等。這些都是因應時代的改變，社會所託付學校的責任。事實上從觀察所得，行循環日制的中學，的確在這些方面下了不少功夫。

（四）因為對於理想教室不足，實驗室及特別室不敷應用或被過度使用，改用循環制後可將實驗科及主要科目的相對比重減輕。例如：科學課若改行六日循環制，它的教節比重實質便減少了六分之一，即16.7%。

（五）據一些「循環日制」中學的同工分享，認為上課的「厭倦性」會減低，主要的原因如下：

(1) 它的變化較大，科目也較多元化；
(2) 每個教節的時間表，基於許多客觀因素往往不能十分理想。有內大學說的"七喜"（連續上七堂課），就算年青力壯、滿懷熱誠的老師也吃不消。但在「循環日制」下，因為彈性較大，可減少以上情況發生。即使此等情況仍出現，它的頻密程度亦由每七天出現一次下降至每8.4天才出現一次。在感覺上，教師的壓力會有一定程度上的舒緩。這亦未嘗不是一件好事。

[illegible]

循環日制的缺點：

[illegible]

[illegible]

(1) [illegible]

[illegible]

所述的，課程發展處的課程指引也明明：「傳統的學術課程再不足以應付所有學生的需要，而對學習能力較弱的學生尤其不甚[illegible]」（課程發展處，1993）。故此，嘗試增加某科目的上課比重以達致提高學生的能力，又是一廂情願的做法，結果可能適得其反。因為學生只會更厭倦上課。相反，如果學校根據其個別情況，編排更多元化、更均衡的課目組合讓學生修讀，提高他們的學習興趣和動機，才是對症下藥的方法。

(2) 除了削減兩科的比重外，用甚麼準則處理按比例計算章數後的小數位問題也值得留意。四捨五入可能是唯一的方法，但採用不合理的進數規則，如果要將一政治角力不明確的討論，既浪費時間也看不見有任何效益。表右嘗試用四捨五入的原則計算，讓讀者參考：

[illegible]

[illegible]

[illegible]

表五：根據課程指引的初中課程建議節數

一般文法中學的科目	課程發展處（1993）每週授課節數建議	六日循環制的理論節數 (x 6/5)	經四捨五入換算	堂數改變之比率 (%)
中文	6 - 7	7.2 - 8.4	7 8	-2.8 -4.8
英文	7 - 8	8.4 - 9.6	8 10	-4.8 +4.2
數學	5	6	6	0
科學	4	4.8	5	+4.2
中史	2	2.4	2	-16.7
歷史	2	2.4	2	-16.7
家政	2	2.4	2	-16.7
音樂	2	2.4	2	-16.7
體育	2	2.4	2	-16.7
地理	2	2.4	2	-16.7

剛剛與中學課者重通過實驗去教導學生的原意相違！

（四）循環日制忽視學法的觀念，不能與社會上共用的星期制一同步，衍生出以下的問題：

(1) 行政效率降低：每當校長、老師和同學們要計劃此將來的工作時，他們都要翻閱有關的時間表及特別的校曆表，這方面被隱藏了的時間損失，是十分巨大的！可惜暫時還未有學者在這方面作進一步的研究！

(2) 學生容易帶錯書：這是學生上課的學習氣氛、老師更忙於處理因此而帶來的紀律問題。但另一方面，循環日制的支持者堅持這只不過是習慣的問題，當大家都熟習這個制度後，問題就會減輕。

(3) 學校對外溝通不流暢：因為學校經常需要與外界接觸，例如課外活動、無線或校際性的比賽及學術交流等，在溝通及安排上都有一定的難處，況且不同學校有不同的「循環日制」校曆，教育署或有關機構無法組織一些能適應各學校的定期性共同活動。

（五）不利教師在職進修和培訓：教師教育對教育的長遠影響是不能忽視的，一教統會在報告書中也重新肯定其價值（教育統籌委員會，1992）。要有效地推行教師教育，在職訓練行政者非常重要的角色；但各大專院校所安排的夜修課程、講座或工作坊等，都面對著各中學循環日制而難以遷就。

假若有老師需要參加一個課程，每逢星期二下午上課，在星期制中只需要安排一個下午沒有課，但在循環制下，唯一可行的方法就是騰空這位老師所有下午的工作，所謂牽一髮動全身，這個局限會影響了其他老師，要是有多一些老師想進修，時間表可能就編不成了，或者校長基於不讓任何老師缺加這種進修，以免有厚此薄彼的情況，故此這些培訓課程只能編排在夜間或週末舉行，對個子這群已經疲於奔命，但卻仍然有志於教育事業的同工的假期及休息時間，對於他們是否健康及公平呢！對於師資培訓機構，若不多所有課程都需要編排地編在晚上或週末，無論人力和其他資源的運用都有一定的困難。

其他可行的方法

從以上的討論，可以清楚地看到「循環日制」的

結語

本文有提及一些環日制現今在香港的普遍性，與試行此制的主要原因，舉出實例及計算供讀者參考，有關教育局的看法之外，在未建議尋找可改之處，但環日制是否一適用之方，用上解決各科教師不調協之苦，實有商榷之處。

其實問題的癥結是：學生學術水平下降，故應從課程改革入手；學校的資源不足，應爭取教育機構改善細班教學，而不應讓這一個不合理的「浮動班」制度維持下去！經過了二十年的時間，在「富裕的香港」仍然有如此惡劣的學習環境，是不能接受的。各校行政人員應在可解決的範圍內盡力而為，而環日制時間表編制會否是行政上的例證？免避實際問題的藉口政策？

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作者

曾國強，香港中文大學教育學院講師

黃偉強，加拿大旧中學輔導主任

Students' Misconceptions in Solving Mechanics Problems

Lo Lam Fat
Chinese University of Hong Kong

Auyeung Po See
SKH Leung Kwai Yee Secondary School

The present study is intended to investigate further into the nature of students' misconceptions in solving mechanics problems by giving a misconception test to 70 secondary-5 students in a government-subsidized school of average ability. The results from analyzing all item responses show that: (1) various misconcepts in mechanics exist ranging from the lowest of 21% to the highest of 96% of students committing a particular misconcept ; and (2) high ability group has significantly less misconcepts than average ability and low ability groups, while the latter two groups are not significantly different in the number of misconcepts committed.

It has been reported in past studies that students' difficulties in learning physics are associated with their misconceptions about physics. These misconceptions are categorized as 'common sense' errors (Champagne, Gunstone & Klopfer, 1983; Halloun & Hestenes, 1985; Osborne, 1980; Viennot, 1979), 'Impetus' influence (Clement, 1982; McCloskey, 1983; McCloskey, Kohl & Washburn, 1981), 'Dominance' orientation (Maloney, 1984), or 'Centre-permanence' error (AuYeung, 1989). These categories are not mutually exclusive but represent what researchers focus on their studies. The importance of these misconceptions in learning is that they have negative effects on student learning (Novak, 1977, 1987). They exist in students' cognitive structure in early schooling (Osborne, 1984) and they are persistent through later years, even in undergraduate years. (Champagne, Klopfer & Anderson, 1980).

How do misconceptions influence learning? Clement (1981) explained that students transform in an active way what they learn in class in harmony with the misconcepts they have possessed before class. Claxton (1987) proposed that misconceptions form minitheories which filter students' understanding of the concepts.

In order to assist students in counteracting their existing misconceptions and improving their understanding of subject matters, instructional programs and experiments have been designed with a certain degree of success (Champagne, Klopfer & Gunstone, 1981, 1982; Champagne, Klopfer & Solomon, 1980; Confrey 1980; Driver & Bell, 1986; Novak, 1987). These programs provide learning strategies to challenge the misconceptions of science held by many students.

The present study is intended to investigate further the nature of student misconceptions in mechanics. Specifically, it aims at analyzing:

(1) To what extent students are influenced by different misconcepts when solving mechanics problems.
(2) Whether there are differences in misconcepts between high, average and low scores of a mechanics test.
(3) What causes students' misconceptions when solving mechanics problems.

It is hoped that the findings from the study will contribute to a better understanding of the learning difficulties in mechanics, the improvement of instructional design in the subject matter, and development of more effective physics curricula.

METHOD

Instrument

A 24-item, 4-choice achievement test was constructed to measure students' misconcepts in mechanics (see Appendix A). These items were derived from various sources and they were particularly selected for assessing 11 misconcepts (see Appendix B) about students' understanding of basic concepts and principles in force and motion. Each item has only one correct answer corresponding to a good understanding of the concept involved and three incorrect answers, one of which reveals a particular misconcept related to the item. All items were written at a readability level for average junior secondary students and were provided with simple schematic diagrams (see Appendix C). The student was required to indicate his/her choice of answer to each item and his/her explanation for making the choice in the answer book provided (see Appendix D). The test was pilot tested beforehand and revised according to the feedback from the test results regarding wording and item characteristics. The content validity of the test was rated as satisfactory by two university lecturers who were experienced instructors of the physics method course and experienced supervisors of practical teaching in physics. The reliability of the test was also found satisfactory (Cronbach alpha = 0.79).

Subjects and Administration of Test and Interviews

Two secondary 5 intact classes from an urban secondary school with government subsidy and average academic standard, each having 35 students aged 16 plus, were randomly selected to take the 24-item misconception test. There were altogether 70 students in the sample. These students had previously learned the concepts and principles contained in the test. They were not given prior notice of the test. They finished the test within 80 minutes, which were reported to be sufficient for every testee.

Prior to the administration of the misconception test, all sampled students took the internal school examination in physics. They were ranked according to their total scores of correct responses in the physics test. Students in the top 20% of the ranking list were classified as high-ability group; those of bottom 20% as low-ability group; and those of middle 20% as the medium-ability group. Each ability group consisted of 14 students. Students with rankings between high-ability and medium-ability groups and between medium-ability and low-ability groups were discarded in order to reduce inaccurate classification of ability groups.

Eight students were selected from the 70 testees for individual interview, which was designed to find out how they arrived at the solution for each item in the misconception test. These interviewees included two from the high-ability group, four from the medium-ability group and two from the low-ability group, all were randomly drawn from their respective groups. Each interview took about three hours to complete.

RESULTS

Frequencies of Misconcepts

Table 1 shows the frequency counts of students who have committed each misconcept in the test, ranging from 96.2% (the greatest) for the misconcept 'Motion implies a force' to 21.4% (the smallest) for the misconcept 'Object falls straight down when released from action'. Out of the 11 misconcepts in the test, three were committed by over 80% of students and seven were committed by over 60% of students.

Table 1

Frequency Counts of Students Committing Misconcepts in the 'Force and Motion' Test

Misconcept	Item#	Head Counts	%
Motion implies a force	17	60	86.6
	24	67	95.7
	15	66	94.3
	Average	67.3	96.1
Reaction in object opposes its motion	4	56	80.1
	1	64	91.4
	Average	60.0	85.8
Friction against a rolling object opposes the motion of the centre of gravity	16	62	88.6
	22	54	77.1
	Average	58.5	83.9
Greater mass causes greater force	5	53	75.7
	14	42	60.0
	Average	47.5	67.9
Greater force implies greater speed	6	49	70.0
	10	66	94.3
	Average	57.5	82.2
Product experiences greater force than produce	19	62	88.5
	8	33	47.1
	Average	47.0	67.8
Lighter object reaches a greater height when projected	20	31	44.3
	2	38	55
	Average	41.0	58.6
Lesser in position implies heavier in weight	10	58	82.9
	23	29	41.4
	Average	43.5	62.2
Circulating object moves in a curvilinear path after released from action	13	31	47.1
	18	37	45.7
	Average	27.5	46.4
Heavier object falls faster than lighter object	11	31	45.0
	17	20	28.6
	Average	29.5	46.4
Object falls straight down when released from action	9	50	72.9
	7	35	72.4
	8	14	20.0
	Average	33.0	71.4

Number of students = 70

Comparison among High-Ability, Medium-Ability and Low-Ability Groups

Table 2 shows the chi-square values to test the difference in number of misconcepts committed in each of the 24 items in the misconception test among the three ability groups. Out of the 11 misconcepts, group difference was significant in all corresponding items of only one misconcept, i.e. M8, and part of the corresponding items of three misconcepts, i.e. M1, M2 and M9.

Further analysis using chi-square statistic to detect differences between two groups shows that the differences in Table 2 are attributable to the differences between high-ability and low- ability groups (in all five items) and between high-ability and medium-ability groups (except in item 20) but not between medium- ability and low- ability groups.

Table 2

Chi-Square Values among High-Ability, Medium-Ability and Low-ability Groups

Misconcept	Corresponding Item No.	df	Chi-Square Value
M1	17	2	0.34
	24	2	14.36*
	15	2	1.78
M2	7	2	1.78
	20	2	11.24*
M3	6	2	0.24
	13	2	1.73
M4	10	2	5.79
	23	2	0.20
M5	12	2	2.03
	18	2	2.15
	21	2	2.05
M6	11	2	4.06
	16	2	1.34
M7	3	2	0.31
	9	2	2.06
M8	5	2	16.11*
	14	2	0.10
M9	19	2	16.02*
	8	2	4.46
M10	18	2	5.46
	22	2	2.60
M11	1	2	1.09
	4	2	1.09

Number of students = 42 *p<.05 **p<.01

Protocol Analysis on Causes of Misconceptions

The protocols were from two sources, viz. explanations given by the 70 students in their answer books of the misconception test and the written records submitted by the interviewers after interviewing the eight selected students. A careful analysis of the protocols reveal that the most common explanation for committing misconcepts in the 'Force and Motion' test was a 'common sense' belief, which simply seemed apparent to them. Although the misconcepts might not be correct explanations of physical phenomena, they were seemingly convincing. A second popular reason for committing misconcepts was their experiences in daily life. Since the misconcepts appeared to be true in daily life, they thought that there should not be 'good reasons' for not accepting them. Another reason given by them was their preconceptions acquired from previous experiences. When faced with the problems which required abstract thinking, their explanation for committing misconcepts was their intuition or spontaneous reasoning, which they were not sure of its correctness but which they could come up with at once. The above causes of misconceptions were not mutually exclusive but they were offered by the students as explanations for committing the misconcepts.

CONCLUSION

The present study confirms the findings from many previous research investigations. Although students have learned physics for a number of years, they still live with various misconcepts. Despite the fact that they have learned, discussed and experimented with the errors of the misconcepts in previous classes, these misconcepts still persist throughout their later years of schooling. A good teacher should be aware of students' existing misconcepts, prepare with patience and ingenuity to correct their misconcepts in and outside his/her classes, and try to change students' misconcepts. For example, many students believe that a object falling from a high position would acquire a greater force when it comes closet to the ground even though they have learned Newton' Second Law in class. By telling the students that they are wrong because this misconcept will violate Newton's Second Law, a great number of them will still make the same mistake repeatedly over a long period of time. If the teacher can use different samples to counteract this misconcept over and over again, the students will have a better chance to correct their misconcept at an earlier time.

The present study reveals that misconcepts exist not only in low-ability students but also in students of other abilities. Therefore, there is no excuse for a good teacher to concentrate on low-ability students for correcting their misconcepts or, adversely, to give up on low-ability students to concentrate on high-ability students. A good teacher should always take care of all his/her students with different strategies for different abilities.

The present study sets out a preliminary step to tackle students' learning problems in terms of misconceptions in the local context. Further research is needed to go deeper into the understanding of the processes of various misconcepts committed by Hong Kong students and the solutions for correcting them.

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Authors

Lo Lam Fat, Senior Lecturer, Department of Educational Psychology, The Chinese University of Hong Kong

Auyeung Po See, Physics Teacher, SKH Leung Kwai Yee Secondary School

Appendix A

Illustrative Items in the 'Force and Motion' Test

Appendix B

Test Items, Misconcepts and Sources

Item #	Misconcept	Sources
1&4	Reaction passes through centre of mass	AuYeung (1989); Hong Kong Examinations Authority (1984)
2&20	Lighter object reaches higher when projected	Hong Kong Examinations Authority (1979)
3,7&8	Object falls straight down when released	Green et al.(1982); McCloskey (1982); McCloskey et al. (1981)
5&18	Pusher exerts greater force on pushee	AuYeung (1989); Minstrell & Stimpson (1986)
6&13	Greater force implies greater speed	Clement (1979)
9&14	Greater mass exerts greater force	AuYeung (1989); Minstrell & Stimpson (1986)
10&21	Object at a lowers position is heavier	Gunstone & White (1981); Watts & Zylbersztajn (1981)
11&19	Circulating object moves curvilinearly when released	McCloskey et al. (1981)
12,15, &24	Motic implies force	Clement (1979); Watts & Zylbersztajn (1981)
16&22	Friction opposes centre of gravity	AuYeung (1989)
17&23	Heavier object falls faster	Champagne et al. (1981)

ENVIRONMENTAL EDUCATION IN HONG KONG SECONDARY SCHOOLS: STATE OF THE ART

John Chi-kin Lee

The Chinese University of Hong Kong

Environmental education has been given a higher priority on the educational agenda in recent years in Hong Kong. This paper reviews the studies on environmental education in secondary schools with special reference to the contribution of secondary school geography towards environmental education. The studies show that only a limited number of schools had circulated and discussed the Guidelines on Environmental Education in Schools, insufficient attention is given to the co-ordination of environmental education, and the contribution of geography curricula to education about the environment is substantial compared with education in through and for the environment.

Introduction

This paper surveys the state of the art in environmental education in Hong Kong secondary schools. The first part outlines the general pattern of environmental education in secondary schools, whilst the second part focuses on the specific contribution of secondary school geography towards environmental education.

In recent years in Hong Kong, environmental problems have become pressing issues of concern. Despite the concerted efforts by the government to alleviate pollution problems, environmentalism in Hong Kong can be characterised as "demand driven". In practice, this means that the government re-examines its environmentally sensitive decisions in response to public concern and complaints (Kwong, 1990). Such a "demand driven" orientation towards environmental management is exacerbated by the adoption of a "command and control" (alias bureaucratic control) strategy in which the environmental decision-making process is not open to public scrutiny (Man, 1993a). Laws aimed at deterring environmental degradation are often watered down.

Until recently, the government had not done much to promote environmental education in schools, although ecological and environmental studies have long been included in both the teaching and examination syllabuses of Geography, Biology, Integrated Science and Social Studies at the secondary level (Lai, 1978; Fung & Lee, 1990). The year 1988 witnessed some change when the Education Department (1988) announced the introduction of a school-based curriculum project scheme which suggested project titles such as "Pollution problems in Hong Kong" and "Water pollution in River Ho Chung". The publication of the White Paper on "Pollution in Hong Kong: A time to act" in 1989 gave further impetus to the promotion of environmental education. More recently, the Curriculum Development Council (CDC, 1992) issued the "Guidelines on environmental education in schools" (hereafter referred to as "Guidelines") to help strengthen the implementation of environmental education. As environmental education has been given a higher priority on the educational agenda only in recent years, there is a dearth of research studies on this topic in Hong Kong. It is against this background that the present report of research on environmental education in secondary schools is conducted. It must be stressed that the literature under review is not exhaustive.

Environmental Education in Secondary Schools: A general pattern

In response to the publication of the "Guidelines", a questionnaire study in 1993 attempted to find out the status of environmental education in Hong Kong secondary schools

and the kinds of assistance needed for its development and improvement (Tung & Lee, 1993). The respondents were the principals or environmental education co-ordinators. A 50% quasi random sample was used, involving 233 schools. One hundred and fifty-five schools responded, producing a response rate of 66.5%. The study focused on the institutional commitment to environmental education, the status of environmental education in the formal curriculum, the learning activities organised through the informal curriculum and the assistance needed by schools.

Institutional commitment

The results showed that only 7 out of 155 schools (4.5%) had circulated the 'Guidelines' and held discussions about the document among the staff, whilst the majority (76.8%) had only circulated it. It was discouraging to find that 29 schools (18.7%) had not even circulated the document. In addition, 65 out of 155 schools (41.9%) assigned one of their staff to be in charge of environmental education and 38 schools (24.5%) set up a committee for planning and co-ordinating environmental education activities. Twenty-one schools (13.5%) indicated that they would appoint a co-ordinator and 29 schools (18.7%) would set up a committee to look after environmental education before 1 August 1994. These figures suggest that about half of the schools still have not given adequate attention to the co-ordination of environmental education recommended by the Education Department (CDC, 1992, p.25).

The status of environmental education in the formal and informal curriculum

As regards the ways of delivering environmental education in the formal curriculum, only 7 out of 155 schools (4.5%) offered a distinct programme of environmental education. As many as 107 schools (69.0%), however, had attempted to incorporate environmental education into existing moral, civic or religious education programmes. Eighty-four schools (54.2%) reported that environmental education was systematically and purposefully taught in school subjects such as Social Studies, Integrated Science, Geography and Biology. Nonetheless, 14 schools (9.0%) replied that they did not teach environmental education at all in their formal curriculum. Finally, only 5 schools (3.2%) reported that they had participated in a school-based curriculum development project which was related to environmental education.

Among the school activities organised in 1991-92 and planned for 1992-93, four were found to be very common: (a) visits to Island House Conservation Centre, Mai Po Marshes, Kadoorie's Farm, etc.; (b) field-trips; (c) board displays, exhibitions, etc.; and (d) talks, video shows, etc. Moderately common activities included competitions and campaigns, visits to museums and exhibitions, and visits to country parks. The least common activities were: visits to gardens, zoos and urban parks, visits to factories, institutions, etc. and camping. Regarding the total number of environmental education activities organised in 1991-92 and planned for 1992-93, the modes are 4 (21 responses) and 3 (26 responses) respectively.

Assistance needed for improving and developing environmental education

It was interesting to note that the perceived need for teaching aids and materials was highlighted most strongly as areas for assistance. This was followed by the recognition of the importance of environmental education amongst the staff and then the need for expertise in environmental education on the part of teachers. Respondents also expressed the needs for curriculum guides, field equipment, school management support and community support.

Some discernible patterns

Cross-tabulation of results reveals a positive relationship between the treatment of the 'Guidelines' and the status of environmental education in the formal curriculum. The results show that none of the schools which circulated the 'Guidelines' among the staff have totally ignored environmental education. Furthermore, the results suggest that whilst most of the schools which offer some environmental education in the formal curriculum circulated the 'Guidelines', only about half of those which do not offer any environmental education did so.

The results of the study suggest that environmental education has not received necessary attention in Hong Kong secondary schools. Few schools offered a distinct programme on environmental education. The majority, however, made efforts to incorporate environmental education into the existing moral, civic or religious education programmes as well as

through schools subjects such as Social Studies, Integrated Studies, Biology and Geography.

The rest of this paper discusses the contribution of a school subject, Geography, towards environmental education. Geography is set up as a case study because it is one of the most involved subjects in promoting environmental education and also environment is its subject focus.

The Contribution of Secondary School Geography Towards Environmental Education

Naish (1986) holds that Geography is the environmental subject par *excellence*, whilst others, such as Mason and Kuhn (1971) and Smith (1978) are less convinced. It is clear, nonetheless, that as Stimpson (1992) and Biddle (1990) suggest, environmental education is a perspective that can and should be incorporated into the geography curriculum.

Lucas (1980) and other scholars (Robottom, 1987; Stimpson, 1992; Yau, 1992) suggest that the nature of environmental education (both through and beyond the geography curriculum) encompasses a definitional tripartite classification of education about, in (or *through*) and for the environment. Education *about* the environment refers to the environment as a subject for investigation and involves the provision of information on environmental issues and the teaching of appropriate technical and intellectual skills. Education in (or *through*) the environment is the use of real-life situations as a basis for inquiry learning. Education *for* the environment involves investigating and clarifying environmental viewpoints and values, environmental problem-solving and taking environmental action. In general, educators adopting a technocentric perspective are inclined to believe that the three kinds of environmental education are complementary and interrelated. On the other hand, protagonists of a critical, ecocentric perspective deny eclecticism and regard education *for* the environment as the genuine and ultimate form of environmental education (Robottom, 1987; Fien, 1993).

Environmental education through the geography curriculum operates at different levels. Goodlad (in McNeil, 1990) recognises: (a) the ideal curriculum -- the triad of education about, in/through and for the environment in the case of environmental education; (b) the formal curriculum -- curriculum guides and syllabi, for example, approved by the government; (c) the perceived curriculum -- what the teachers perceive the curriculum to be; (d) the operational or instructional curriculum -- what actually happens in the classroom; and (e) the experiential curriculum -- what students derive from, and how they perceive the operational curriculum. The paper will discuss the results of selected studies at different levels of geography curriculum in relation to their contributions towards environmental education.

In Hong Kong, two centralised agencies are mainly responsible for the identification, development and promotion of new or revised educational programmes or curricula in Hong Kong: the Curriculum Development Council (CDC, formerly Curriculum Development Committee) and the Hong Kong Examinations Authority (HKEA). The former produces the syllabuses for Geography (Forms I-III, IV-V, Sixth Form) and the latter produces the Hong Kong Certificate of Education (HKCE) and the Hong Kong Advanced Level (HKAL) Geography examination syllabuses.

Official syllabuses

According to the levels of curriculum suggested by Goodlad, these official and recommended syllabuses represent the formal curricula of school geography. Yau (1992) analysed the CDC syllabus for Certificate geography and concluded that all 26 themes in the syllabus are about the environment. Lee (1993b) compared its content with the database suggested in Hanselman et al's (1990) Essential Learnings handbook, and the results reveal that all the themes are found to match with some of the categories that experts have agreed to form a concrete understanding about the environment (Table 1). Furthermore, cognitive, psychomotor and affective objectives pertinent to environmental education are included in the syllabus. Amongst these objectives, environmental knowledge, skills, and awareness are emphasised. For example, students are expected to "be aware of the responsibility of a citizen in alleviating energy conservation, urban and pollution problems" (CDC, 1984, p.50- 53).

However, action as an integral component of environmental education, which provides students with opportunities to be actively involved at all levels (e.g. in the local community) in working towards the resolution of education

for the environment, seems neglected. With regard to education *in* the environment, fieldwork in the geography curriculum, however, is not obligatory and only encouraged to be conducted whenever possible in the themes of landforms, farming systems and urban land uses. It seems apparent that the senior secondary geography curriculum is likely to contribute significantly to education *about*, *in* and *for* the environment. Its content, however, is predominantly conducive to education about the environment whilst education *in* and *for* the environment are relatively under-emphasised.

Table 1 Environmental education through senior secondary geography curriculum (adapted from Yau, 1992)

Theme and topic ABOUT the environment	Essential learning categories (Hanselman et al, 1990) for environmental education	Themes recommended to be studied IN the environment (Field Studies (F.S.))	Themes specially recommended to be studied **, may possibly be studied FOR the environment * (with selected concepts)
I. Land			
A. Landforms	Land & Soil		
1. Mountain building			
2. Rocks			
3. Denudation		Hong Kong (F.S.)	
4. Rivers		Hong Kong (F.S.)	
5. Coasts		Hong Kong (F.S.)	
B. Weather and climate	Weather & climate		
1 Elements of climate			
2. Climate of Hong Kong		Hong Kong	
3. Interpretation of Hong Kong weather maps		Hong Kong	
C. Ecosystems	Ecosystems		* (Interaction)
II. Population	Population factors		
A. Factors affecting growth and size		Hong Kong	
B. Composition and structure		Hong Kong	
C. Distribution			
D. Problems and solutions			** (Overpopulation)
III. Man-land Relationships			
A. Agricultural activities	Agriculture		
1. Farming system		Hong Kong (F.S.)	
2. Intensive and extensive farming			
3. Overcoming constraints on farming		Hong Kong	** (Conservation)
B. Manufacturing activities	Manufacturing & technology		
1. Factors affecting industrial location			
2. Changes in industrial development		Hong Kong	
C. Urban settlements	Settlements		
1. Urban processes			
2. Urban land uses and factors affecting their distribution		Hong Kong (F.S.)	
3. Functions of urban centres			
IV. Issues Arising from Man-land Interaction			
A. Natural hazards	Human influences upon environment		* (Environmental impact)
B. Energy resources	Energy and minerals		** (Resource management)
C. Urban problems	Settlements	Hong Kong	** (Planning, Conservation)
D. Pollution	Pollution, Limits to systems	Hong Kong	** (Ecological damage)
E. Recreation	Wildlife & fisheries	Hong Kong	* (Related use of resources)
Total: 26		14 with 5 themes recommended for field studies	** 5 themes * 3 themes

Teachers' perceptions of curriculum objectives

Teachers often perceive and interpret the formal curriculum in many ways and with different priorities. In another study, a convenience sample of 54 geography teachers responded to a postal questionnaire that probed into their perceptions of the objectives of the CDC syllabus for Certificate geography (Lee, 1993b). These results seem to suggest that those geographical objectives pertinent to education about the environment and education *in/through* the environment are more favoured by the Hong Kong geography teacher respondents compared with those objectives relating to education *for* the environment. Each respondent selected at most five of the more important geographical objectives from a list of nine objectives. The results show that the understanding and application of fundamental geographical concepts is perceived by about 17% of the respondents as the most important objective. In addition, the objective of 'developing skills related to the collection, analysis and interpretation of data which may be derived from sources such as fieldwork, maps, photos, statistics, and written materials' has the second ranking in terms of frequencies. About 13% of the total responses reveal that the ability of pupils to understand environmental problems and suggest possible solutions is also an important objective. In contrast, the three objectives which receive the lowest rankings are 'developing a knowledge of some systematic aspects of geography', 'identifying not only the differences between environments but also the similarities, and being able to explain the observed spatial patterns' and 'using data to present information in short answers and reports, development of argument both orally and in written form and illustrating by drawing maps, diagrams and graphs'.

These results are not dissimilar to an earlier study which found that geographical educators in Hong Kong believe that understanding the environmental system, developing skills and learning to make wise decisions about using the environment should be emphasised in the study of geography, whilst preparation for citizenship and work are less important (Gerber, 1990). It appears that education *for* the environment, which entails the development of pupils' abilities to participate in environmental decision-making, receives relatively less attention amongst geographical educators. This may be partly attributable to the practice of geography teachers who tend to promote the 'safer' education about and *in/through* the environment which support the traditional notion of schooling and avoid the more radical education *for* the environment.

Perceptions of teaching style and teaching strategies

Despite the good intentions of curriculum objectives towards environmental education, there may be a mismatch between the intended aims and the ways teachers translate environmental objectives into classroom teaching. A study on teaching style confirmed the existence of this mismatch (Wong & Stimpson, 1994). A teaching style questionnaire, containing different teaching situations that reflect Gagne's eight instructional events, was administered to 282 teachers. The results indicate that most teachers prefer open approaches at the beginning of lessons but become more restrictive as lessons proceed. In addition, a guided discovery approach or an expository approach is supported by a majority of teachers whilst an inquiry approach is less favoured. In another study, 54 geography teacher respondents were asked to mark the three most desirable and effective teaching strategies in teaching five selected topics in senior secondary geography, namely pollution, the urban environment, energy resources, population and the physical environment (Lee, 1993a). The results reveal that a substantial proportion of geography teachers attach higher priorities to strategies such as the use of audio-visual aids, explaining with the aid of the textbook(s), notes or worksheets, and fieldwork in teaching the topics of pollution, the urban environment and the physical environment. In teaching the topics of energy resources and population, most teachers tend to value more highly teaching strategies that involve explaining with the aid of the textbook(s), notes and worksheet(s), discussion and the use of audio-visual aids. Furthermore, problem-solving exercises are preferred by a number of respondents in teaching the topics of pollution, the urban environment, energy resources and population. Other strategies such as role-playing, games and simulations, which can help students examine environmental decision-making and the attitudes and values influencing these decisions, receive relatively low ratings from geography teachers. Values clarification strategies, which are effective in helping pupils understand the relationship between their values systems and the environment, are amongst the least preferred teaching strategies (Man, 1993b). These preferred strategies used by the geography respondents match quite closely with the types of teaching resources, comprising textbooks, notes and worksheets and occasionally audio-visual materials. The pref-

erence for these 'teacher-centred' and 'resource-based' methods in geography teaching may arise, particularly in the case of Hong Kong, from meeting the demands of content-laden public examination syllabuses. However, teachers' perceptions of traditional and resource-based strategies as effective and desirable strategies are likely to support the implementation of education *about* rather than *in/ through* and *for* the environment.

Extent of environmental education

Discrepancies may exist between perceived and operational curricula: what teachers perceive a geography curriculum to be and what actually goes on in the classroom and in the field. Part of the same study asked the teachers to rate the extent of their teaching of environmental issues by assigning a value from 0 (did not teach at all) to 3 (taught in considerable detail) to a range of issues and attitude- foci. The results show that geography teacher respondents taught the following areas in some detail: (a) attitudes of concern for the quality of the environment, (b) attitudes of concern for the biosphere as a system which supports all life, and (c) appreciation of the conflict of values inherent in many development proposals.

Judging from the results, it could be asserted that due attention was being given to helping students acquire social values and concern for the environment through geography teaching in Hong Kong. However, the study of local issues and development of skills pertinent to environmental education seems to be grossly neglected by the respondents. The involvement of students in local issues (e.g. taking part in public enquiries, meetings or submitting evidence) and the teaching of 'Country Code' and other 'Codes of Behaviour' deserve greater attention from geography educators to enhance students' environmental education. Such approaches would help students develop awareness of environmental problems and responsibility for ensuring appropriate actions to help solve these problems and to avoid future problems. The low mean scores of the aesthetic awareness of a range of environmental stimuli imply that the development of personal geographies in association with environmental experiences is relatively neglected in existing geography curricula.

The same study also found that 52% and 47% of the respondents reported no fieldwork arrangement for Secondary years 4 and 5 respectively. The duration of each field trip ranged from half a day to a two-day trip. In addition, about 50-60% of the respondents reported that they had spent some time on individual or group projects. However, such 'projects' often emphasise the product, in the form of written reports, for example, but the procedures of enquiry receive little attention. These data suggest that the contribution of geography to education in/through the environment needs further improvement.

Student learning in environmental education through geography

Assessment of student learning is essential for the evaluation of the effectiveness of curriculum, which provides clues for understanding the experiential curriculum. The scope of assessment should encompass cognitive, skills and affective components of learning objectives. Using the topic of 'pollution and traffic problems' in Secondary One Geography, Yau and Kong (1989) designed the learning objectives and teaching / learning activities based on Bloom's taxonomy and Krathwohl et al's hierarchy of affective learning. The teaching of the topic lasted three periods including one period of fieldwork. In order to assess the learning outcomes, a pre-test and post-test of student performance in cognitive, skills and affective learning were carried out before and after the teaching of the topic was introduced. Statistical results reveal that students show significant improvement in cognitive, skills and affective learning.

Conclusion

The results of some of these studies appear to suggest that the contribution of geography curricula to education *about* the environment is substantial compared with education *in/ through* and *for* the environment. In the case of Hong Kong, the introduction of compulsory fieldwork into the senior school geography curricula would probably improve the implementation of education *in/through* the environment (Fung & Lee, 1989). The findings of many of these studies also substantiate the claim that education *for* the environment is a relatively neglected area, despite some teaching of values and attitudes in senior secondary geography curricula. The components of action and participation in environmental education, including the involvement of students in local issues, should be fur-

ther enhanced in geography teaching.

It seems apparent that the ideal curricula of environmental education, namely education about, in and for the environment, may be prioritised differently by practitioners at the level of teachers' perceived curricula. Incongruence may also exist between teachers' perceived teaching objectives and strategies and their actual practice in environmental education through geography teaching. More research is needed to explore the reasons why and the context within which such discrepancies occur. The results of these proposed studies would provide insights for curriculum developers and educators to implement environmental education in schools more effectively.

Moreover, many studies cited in this paper use quantitative research methods such as surveys and quasi-experimental design, and deserve further investigations from alternative research paradigms. Ethnographic and phenomenological studies, for example, can be undertaken to explore the ideological stances of geography teachers and to understand the real teaching situation so that the contribution of geography teaching to environmental education can be analysed from a different perspective (Lee, 1993a). Critical analysis of institutional and political barriers preventing the prosperity of education for the environment may also be helpful for interpreting the extent and nature of environmental education in the school and classroom setting.

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Author

John Chi-kin LEE, Lecturer, Department of Curriculum & Instruction, Faculty of Education, The Chinese University of Hong Kong

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Promoting teachers use of instructional technology in Hong Kong

Sabrina Su-Fen Chin

Chinese University of Hong Kong

Learners now must learn new skills, new methods and acquire new knowledge to face the challenge of overwhelming information. Instructional technology is found to be a valuable vehicle to serve such needs. In the classroom, instructional technology can not only support teachers to effectively present materials to the learners but also assist learners to conduct rapid and massive information searches, analysis, and synthesis. However, even if teachers are aware of the impact of technology in learning, they may still not use it in classroom teaching for several reasons. To remain up to date, teachers should recognize their new role in the technology integrated curriculum, acquire knowledge and develop skills to make technology a powerful means for teaching.

This paper first examines the new teacher-technology-student relationship. Factors that cause teachers use, under use, or no use of instructional technology in the classroom are investigated. Principals support is vital to the promotion of teachers use of instructional technology. A set of guidelines for the principal is listed. In-house training programs are recommended for they can best meet the needs of individual school and develop the rapport among the teaching staff for better collaboration and communication. Suggestions for such inservice training programs are made.

Introduction

Educational researchers have explored extensively the behavior and cognition development of human learning to uncover better ways for teachers to teach and students to learn. In this research, some researchers (Chambers, 1988; Chen, J. 1989; Kenney, 1988; National Education Association, 1983; Proctor, 1983; Valdez, 1989) suggested that the power found in instructional technology could serve as a valuable instructional tool, resource, support, supplement, and enrichment. But what is instructional technology?

Definition

As an emerging field, the term confuses both professionals and laymen because of different understandings of technology. According to Gentry (1991), instructional technology is of the systemic and systematic application of strategies and techniques derived from different sciences. It entails instructional message design, message delivery, and evaluation of message effects with specific purpose and values. In its most practical terms, it is the use of *programmed* software and hardware to achieve specific learning objectives with direct or indirect evaluation measures, be it educational television (ETV), slide/sound tape program, computer-assisted-learning (CAL), computer-assisted-instruction (CAI), interactive multimedia learning packets, or the traditional teaching aids in various formats. Traditional teaching aids, such as textbooks, blackboards, bulletin boards, models, filmstrip, 16mm films are usually regarded as old technology, or traditional instructional media. They tend to be group-oriented, instructor-centered, and textbook-based. Although no one can deny their value to learning, learners cannot acquire sufficient knowledge from the old technology for the information age.

The new instructional technology, dynamic in its functionality and versatility of information presentation

platforms, offers a new tool and serves as a new source for both teaching and learning. CD-ROM, videodisc (or laserdisc) each stores enormous amounts of information. Word processing programs allow teachers to prepare teaching notes and help students write reports. Telecommunications allow users to communicate with other users anywhere in the world, and can search information at a blink of time on any topic in various formats: text, graphics, pictures, sound, and videos. Electronic mail unleashes people to communicate with someone in real time without any geographical restriction. Database programs guide students to research in a very structured way. Spreadsheet programs ease students anxiety to do the calculations while mastering the concept of constructs. Distance education via satellite takes education beyond the isolation of the classroom walls. Videocameras allow users to record live events. Edited materials become valuable data for effective and interesting presentation and visual or audio research archives. Instructional technologies can be both instructor-dependent and instructor-independent. They can be used inside and outside the classroom and there is no fixed class time. Best of all, this enriches one's learning experiences individually and collaboratively.

Technology is dynamic, yet teachers cannot be supplanted by technology, nor should they be enslaved by it. Using technology for technologys sake is more likely to impede learning than enhance it (Shore, Mason, Pedersen & Armstrong, 1990).

Teacher-technology-student relationship

In a classroom where technology is available, the linear verbal teaching and learning cycle is broken down. The teacher does not get full attention as she/he used to get in class , or may not get any at all when students focus on learning the content introduced through some technologies. The behavioral pattern of both the teacher and the learner has to change correspondingly to adapt to the new element it is meant to serve.

With proper use of instructional technologies, teachers can present materials more illustratively, demonstrate some learning situations for emulation, guide the students to self learn certain topics, provide scenarios for problem-solving, drill students to achieve specific skill proficiency, and even offer simulated learning situations. They can use technology to tackle managerial tasks, such as writing tests, and grading. Students can take charge of their own learning--self-pace, self-learn, and even self-produce some electronic reports individually or as a team. Still, students rely on teacher's guidance to manipulate technologies for fast and massive information search, analysis, and synthesis in the process of knowledge acquisition. They need teachers to show them the ropes to read data critically. The apprenticeship of technology ethics and information ethics is better developed under the surveillance of teachers, especially for the younger students.

New role of teacher and student

The impact of the new student-teacher-technology relationship thus requires the adjustment of both teachers and students to their new roles. The emerging roles of teachers as collaborator, mentor/mentee, planner, researcher, and seeker are identified by the Christa McAuliffe Institute for Educational Pioneering (Chan, Fortunato, Holte, Morse & November, 1988). This concept implies that the nature of operating a classroom changes from the centralized authority to decentralized facilitator as technology becomes a part of the students' daily learning activities.

Teacher is no longer the only information disseminator, and the student the passive information receiver. Instead of lecturing from beginning to end, teachers can free themselves to facilitate individual students learning needs respectively. The personal sources of information, knowledge, and skill then become the teachers real asset to the learner rather than the amount of information of a given topic solely.

Students and teachers can collaborate on researching a specific topic. Students learn from the teacher to think more critically and the teacher may learn more about the topic through students research findings reciprocally. This new learning process exemplifies the traditional Chinese adage "teaching-learning reciprocity".

Individual attention to the learner helps to increase the interaction between the teacher and the student. With the new mode of teaching and learning, students have opportunities to interact and establish better personal relationships with their teachers, which it is vital to the growth of young students.

Teacher competency

Obviously, being a competent teacher in the information age is no easy job. Apart from the daily teaching, classroom management and other duties, teachers are gradually expected by the principal, the students and/or self to have updated knowledge and skill to access new information concerning their teaching subjects, teaching methods, other duties, and perhaps some new instructional technologies. Technology advances so fast that teachers who have received formal technology application training in college may not feel adequate to meet current needs in the classroom. The situation gets worse for teachers who were never trained in college nor received any inservice training at the work place.

Educational pitfalls

In the traditional linear and spoon-feed teaching environment as Hong Kong, teachers' recognition of their new role becomes crucial. The reason can be easily understood. Adhering to the Chinese tradition, students are raised by teachers and parents to be tame, submissive and quiet. Ideas, expressions or actions that do not follow the norm would be immediately laughed at, criticized or even punished openly. Hence, if teachers do not initiate a different way of teaching, almost certainly, their students will not, and dare not, think of taking any initiative to learn differently.

In Hong Kong, most teachers, except primary and kindergarten teachers, do not use any instructional media other than the blackboard and/or worksheets to make their teaching concrete, comprehensible. Students have to use their intelligence, imagination (ability to decode those fuzzy codes, not imaginative ability per se), and memory to pass tests. Students are trained to be good at reciting what was taught and what was written in the textbook on test papers. Whether they can think critically or creatively is another issue.

The greatest irony to Hong Kong education is that teachers follow the tradition to teach (they too have a set of teaching codes to follow) wishing for better open-exam results for their students, while the students themsleves have to fight for survival since graduation day. The schools disconnection from the larger society contributes to the complaints by employers about the quality of the graduates: being incapable of reading, writing, speaking bilingual fluently, lacking simple arithmetic skills, or not able to solve problems or make correct decisions. Technology is by no means the solution to those educational problems, but it can be a useful tool to help *improve* the abilities students need before graduation.

Knowledge is power and information is the commodity of currency in the information age. If Hong Kong educators can perceive the value of information, they can better appreciate the warning Jonassen (1984), and Koontz, Jr. (1992) cautioned. Teachers who adapt with the newer technology will prosper and those who cannot adapt, will not only fall behind and become information deprived, but will also deprive their students.

Instructional technology: to use or not use

No one single factor dominates the reasons why teachers use or do not use technology in aiding their teaching (Chin & Horton, 1993). According to Chin & Horton (1993), decisions to use or not to use technology to facilitate teaching can be categorized into four major factors. They are: (a) teacher's perception of instructional technology, (b) teachers perception of self knowledge and skills, (c) teachers perceptions of the administrative leadership, and (d) teachers perceptions of the administrative support. Research findings in these four areas indicate that positive perceptions of the use of media greatly affect teachers' use (Sinatra, Beaudry, Picco & Geisert, 1994), the school principal is able to affect attitudes of teachers (Felt, 1985), teachers tend to learn more about the effective use of computer technology when that it is made available and teachers who had received specialized training were more familiar with and confident using the computer system (Barker, 1994).

Level of use and causes

According to the Congress of the United States Office of Technology Assessment's (OTA) (Congress of United States, Office of Technology Assessment, 1988) report, almost all teachers want to use technology. Some of the reasons cited are related to personal growth, some to concern for students, and some are reflective of external pressures. Some conscientious teachers not only engage in learning to use and/or develop courseware to enrich their students learning process but assist their peer teachers to acquire the needed knowledge and skill to use some instructional technologies. Some wait

by watching how the educational policy and trend evolves, while still others have a more resistant attitude in dealing with the atmosphere of change. In the study of the level of technology use, Seidman (1986) reported that "Schoolteachers do not use much of the media equipment and materials at their disposal. When they do employ media, the simplest and most accessible are usually selected: overhead transparencies, book and magazine illustrations, games and simulations, phonograph records, and models. More complex technologies — computer and video equipment — are avoided" (p. 20). This finding coincides with Morlan and Lui's (1991) findings.

Although some technologies have been quite visible and accessible in the school, it is still left up to a teacher's personal discretion to use them. Bellamy, Whitaker & White (1978) and Dodge, Bogdan, Brogden & Lewis (1974) concluded the reasons of under-use and no use of technology were: (1) teacher's sense of discomfort or fear of technology, (2) a lack of familiarity with non-print learning resources, (3) unaware of resources available, (4) unwilling to expend extra effort required to locate media resources, (5) unwilling to plan for the use of such resources in a presentation, (6) unwilling to make arrangements for set-up, (7) unwilling to operate necessary equipment, (8) have problems with classroom management, and (9) personal teaching styles. Seidman (1985) found burn-out, characterized by a lack of enthusiasm and physical energy by workers (Cherniss, 1980) was also a factor as to why teachers do not use technology. Cherniss indicated that burned out teachers used technology less frequently than did teachers who were not burned out.

Whose decision?

Teachers' use, under-use or no use of instructional technology is a both subjective and objective decision. Subjectively, individual additional effort is required to use technology in teaching from overcoming the fear of technologies to know how to integrate instructional technologies into the curriculum. Objective situations such as shortage of functional technology, under-funding or no funding to purchase software and hardware, difficult to schedule or share the limited equipment, administrators discouragement (considering teachers who want to use technology as a nuisance), inadequate physical environment in terms of space and condition, or lack of technical support personnel can make teachers shy away from the time-wasting, trouble-making effort. Teachers' efforts in making teaching versatile may not be credited under the examination-dominated education system. Overloaded teaching responsibilities, a common practice in Hong Kong, is also a critical deterrent attributed to the under-use and no use of instructional technology.

How to promote instructional technology to teachers?

To make people think differently, it is essential to help them perceive a need for such a change. In promoting the integration of technological innovation into curriculum, Brunner reached the same conclusion (Brunner, 1992). To recognize the need for integrating instructional technology into the curriculum depends on (1) a shared view of the indispensable need and power of technology in education by the principal and the teaching staff, and (2) the principal's leadership to encourage and support teachers' use of instructional technology throughout the curriculum (Congress of United States, Office of Technology Assessment, 1988).

Time, resources and support

The three most important keys to promoting instructional technology use are time, resources, and support (Fulton, 1993). Teachers need time (Fulton, 1993; National Education Association, 1988) to develop a sense of familiarity with new knowledge, skills and concepts of technologies. They need time to overcome fear of using technologies. Although this is a real challenge to schools in Hong Kong, school principals must be willing to seek ways to give teachers enough time, at least alternatively, to process and digest new skills and knowledge before they can actually use technologies in the classroom.

Due to limited resources and funds available in Hong Kong schools, it is more realistic to assist teachers to start using technologies that are already available. Resources in the library or media center should be promoted for regular use in the classroom as they are by nature less complicated as that of computers. Resources should be provided to allow teachers to experiment. They should be encouraged to explore more software applications, and to integrate technology into the curriculum (National Education Association, 1988). Non-computer teachers should not be excluded from accessing computers in the computer lab for other subjects. While ongoing communication and collaboration among teachers

play a critical role in promoting successful technology integration, administrators need to establish ways to facilitate collaborative effort (Zorfass & Remz, 1992).

What can administrators do?

Bailey and Bailey (1994) advocate that administrators need to get ready for change, understand technology, create a comprehensive technology staff development program, implement it, institutionalize it and evaluate it.

The following guidelines can be a start for the administrators, though obvious barriers do exist.

1. Demonstrate commitment to adopt technology in teaching and make it known to both teaching staff and administrative staff.

2. Seek funding to support the purchase of software for diverse subjects — As the demand of observing the intellectual property rights is increasing internationally, schools have to allocate funds to solve the problems of software shortage. Making the best use of available hardware is more realistic than waiting for the promised new hardware yet to be installed.

3. Develop a climate of support and encouragement in instructional technology use in school — At the initial stage, top-down initiative could be more effective. As an atmosphere conducive to technology adoption is built, bottom-up methods can consolidate teachers' use and encourage more input from the whole teaching body.

4. Initiate a dialogue among teachers to build the awareness of technology and the change in teaching — Provide time and venue for teachers to discuss their concerns and feelings for the adoption of technology. Teachers' voice should be heard and treated with respect and support.

5. Assign one designated office (could be library, media center) as the center where teachers may access the software easily.

6. Organize instructional technology inservice training programs — Involve the persons responsible for the curriculum, budget, teacher representative, and training program technical coordinator in the program planning and implementation from the beginning. The principal needs to give inspiration and support. Note that training programs may be exhausting for the conveners. Relieve those conveners to dedicate their time and effort to the training programs. Thorough planning is demanded for any successful inservice training programs. A successful prototype inservice training may encourage more teachers to participate in the later sessions.

7. Find substitute teachers to relieve teachers who are involved in the inservice training program accordingly. Do not have attendees take over the workload from the convener as this decision may discourage the attendees from participation.

The researcher is not implying that all these can be easily achieved, nor should the administrator be discouraged by the current condition and what effort it may demand.

In-house training

Training gives teachers the necessary skills to use technology. The fear of embarrassing themselves will reduce substantially once they master the skills and have confidence to control the technology (Metcalf, 1989). Investments in technology cannot be fully effective unless teachers receive training and support (Congress of United States Office of Technology Assessment, 1988). Studies show computer technology training leads to cognitive gains, more positive attitudes toward computers, increased involvement in integrating CAI into the classroom, increases in student exposure to CAI experiences, decreased technophobia and computerphobia, and increased effective utilization of computers (Brennan, 1991; Ernest & Lightfoot, 1986; Gressard & Loyd, 1985; Masden & Sebastiani, 1987; Mechling, Dunlop, Kerrigan & Heeter, 1987; Rosen, Sers & Weil, 1993; Thompson, 1985).

School-based in-house inservice training is of more direct need of the teachers. Often teachers attend sessions held out of school and find them unadaptable to their situations due to different hardware systems, different software, or different teaching topics. They may have problems modifying concepts to suit their own needs. Hong Kong teachers are generally reluctant to express specific needs or problems in unfamiliar environments than with their colleagues. Attending tailor-made in-house inservice training programs may help

teachers develop rapport and allow for more communication and collaboration among themselves. Instantaneous assistance to peer's problems may be of direct benefit.

The other advantage of school-based in-house training workshops is to students. When teachers work together, they may jointly assign certain projects that require students to study from more than one perspective. The training of multiple perspective observation may cultivate students the ability to think more critically and more maturely across subjects.

In-house training personnel are best drawn from the school. As the goal of promoting the proper use of instructional technology in class is to improve teaching effectiveness, peer coaching not only allows teachers to share the knowledge, skill of some specific technology but more importantly, to share the personal experience of using some technologies in class that is conditioned to the school situation. Should there be a need to have some field expert from outside, a colleague who is more knowledgeable of the field may be in charge of the organization for the training workshop.

In-house inservice training should be developed in three stages: start from planning stage, implementation stage, and complete in the final evaluation stage. Persons involved in the planning should reach consensus on the following items.

Planning stage

1. Organize a mentor group -- Give a workshop exclusively for those experienced teachers in computer and instructional technology use to serve as mentors to inexperienced teachers in the school. Preferably one mentor one subject at least. Do reward those mentors openly.

2. Solicit teachers' pressing needs as training topics, not limited to any subject.

3. Student need relevancy -- Is the content of any training program pertinent to student needs?

4. Release time -- How much time is allowed for teachers to participate in the program, including training and exercise time, without overloading them with new knowledge and old duties?

5. Availability of technology - Prioritize topics of the most available media so teachers do not have to wait for a long time to use them in class. This list should try to match teachers' pressing needs.

6. Accessibility of technology -- Can we have a qualified technician to maintain the condition of hardware and be accessible for setting-up the media?

7. Budget to buy software -- How much budget can we have to buy the most needed and not quite costly software?

8. Use available on-site software -- If funding is short, what available software is needed most?

9. Technical support -- Can we afford a full-time technical coordinator to conduct in-house training workshops and at times offer individual assistance to teachers? If not, can we find enough teachers to offer workshops collaboratively?

10. One-shot deal or long term - How long should the training program be? Is one workshop enough to cover everything? How many meetings are enough for each topic?

11. Duration and place -- How long should each workshop last? Where is the venue? How is the environment? How many people can it hold each time?

12. A feast is only good when guests show up -- To market training workshops, posters, flyers and personal invitations are crucial.

13. Award participants to encourage more to come -- What is the best way to award the participants to motivate other teachers to join?

After you have designed the workshop, be sure to prepare yourself well for the whole operation. Only when you take the workshop seriously can you make it meaningful for those participants, including yourself.

Implementation stage

1. Before the workshop begins, check the venue, environment control, seating comfort, handouts, beverage (wa-

tel, tea, coffee), attendance sheet and evaluation sheet.

2. Begin the workshop punctually and end on time.

3. Be sure to welcome the participants and make them feel comfortable.

4. Be specific of the learning objectives at the beginning of each workshop. A check list may help teachers stay on target.

5. Instructions in each workshop should be brief. Provide handouts with lists of specific procedures, should it be a must to go through a particular topic/program.

6. Be informal and supportive to the participants.

7. Always allow plenty of time for hands-on activities during workshop. Do not rush to the next topic and leave your participants suspended with their problems.

8. Design some exercises that are achievable without much difficulty.

9. Pair up principal, committee members with teachers in the workshop to increase mutual understanding and support.

10. Group workshops work better than individual consultation. After teachers feel more comfortable, individual consultation can be tailor-made.

11. Ask participants problems encountered openly at the last ten minutes and provide solutions immediately. If this is not possible, be sure to make them known soon.

As you should revise what you taught yesterday for the next time, check the responses from the attendees for evaluation and revision. Even if you do not conduct the next workshop, the evaluation may be valuable for the next conductor.

Evaluation stage

1. Collect evaluation sheets at the end of each session. Tabulate the data for future reference.
2. Meet with technical coordinator, curriculum coordinator, and subject head teacher to discuss the feedback and compare with the attended objectives. Go through every negative response carefully and seek ways to improve. Share positive points concerning the operation of the workshop for other conductors to emulate. Follow-up may be necessary to solve specific problems some teachers raised on the evaluation sheet.
3. Prepare for the next workshop with revision.

The considerations for in-house training program are not covered fully in the above suggestions. Each school may have unique situations to deal with. Whatever problems there are, when there is a will, there is a way.

Conclusions

Instructional technology can empower teachers to better facilitate students to learn, to solve problems and make intelligent decisions in the complicated, if not chaotic, information era. Both teachers and administrators must realize that the use of instructional technology is no longer an option, it is a must. To make teaching and learning productive and excellent, capital investments in the tools to make instructional technology work is essential. The adoption of technology may force us to restructure our teaching and learning pattern and we must have the right attitude to allow this to happen.

Research on teacher's use of instructional technology in class at all levels is an untapped area in Hong Kong education. Rarely can one find any official, academic or practitioners reports concerning the situation of technology utilization, problems encountered, new teaching methods of technology integration projects or the effects on student learning. The government's focus of technology use (mainly computer networking) in primary, secondary and college level is geared towards administrative efficiency (Hong Kong Education Commission, 1992; Hong Kong University and Polytechnic Grants Committee, 1991) rather than teaching and learning. The Curriculum Development Department reported their work, made suggestions but no research studies reported (Hong Kong Education Commission, 1990). To promote the common use of technology in the school, more action plans from both the government and the principals are needed. More research and

practitioner reports should be published to arouse the awareness and participation of more educators to make technology a feasible tool in classroom teaching.

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Author

Sabrina Su-Fen Chin, Lecturer, Deprtment of Curriculum & Instruction, Faculty of Education, The Chinese University of Hong Kong

中文教師在專業知識方面的自我評鑑

何萬貫
香港中文大學教育學院

本研究旨在調查香港中學中文教師對下列三方面專業知識的了解：1. 對中學中文課程的認識，2. 對中學中文教學目標的認識，3. 對中學中文教學、銜接、連續性的認識。研究對象為100名中文教師。研究結果顯示，他們對中小學課程普遍缺乏認識，因此對課程的銜接、連續性也缺乏關注。

Chinese Language Teachers' Self Evaluation on Their Professional Knowledge

The study aims to investigate the extent of understanding of the Chineselanguage teachers in secondary schools on the following professional aspects: 1. Chinese language curriculum in secondary schools, 2. Objectives of the Chinese language curriculum in secondary schools, 3. Articulation and continuity of the Chinese language curriculum. The results indicated that most Chinese language teachers showed limitedknowledge on the Chinese language curriculum on primary or secondary school levels. They therefore also lacked the knowledge on and seldom concerneded with the articulation and continuity of the Chinese language curriculum.

隨著科技的進步，社會的急速變遷，在智識爆炸的時代，有些行業已走上專門化的道路，於是各種行業開始重視要求從事該行業的人，必須具備該行業的專業知識，如教師、律師、建築師、會計師等。這些行業已被認為是專業人士。某個行業一旦被認為是專業，就勢必在社會上佔有較重要的地位，而它的從業員在社會上亦有較大的影響力（Goode, 1969；Larson, 1977）。

教育工作是一項古老的行業，它具有悠久的歷史。隨著時代和社會的進步，教育工作者一方面繼承前人的經驗，一方面接受時代的挑戰。未來教育研究人員和準教師的教師，他們所接受的訓練，所懷抱的理想，所任職的學校結構，與當前的社會已經很不一樣。教師的從業員，曾在不足多年，甚至數年能力成為一門專業？根據西方社會學觀點，一般學者傾向於把教師工作歸入「已確立的專業」established profession，而不能是一門「邊緣專業」marginal profession（Wilensky, 1964）或一門「半專業」semi-profession（Etzioni, 1969）（曾榮光，1984）。當中所牽涉的問題，十分複雜，不在本文討論之列。從社會學的角度來看，教師專業化的最終目的是要把教師一般的社會上職業轉化成為社會分層中的個別層，同時要爭取較個別層的向上流動（曾榮光，1984）。然而，在爭取社會承認教師作「專業」的過程中，教師必須具備足夠的「專業能力」（professional competence）。所謂「專業能力」應包括教師個人的學養、品德、教學技能和方法、教學研究等方面的發展。如果「教育」能夠發展成為備受推崇的「專業」，從事這個「專業」的核心人物——教師，將以保證教學質素和提高教育水平為己任。

本研究集中討論香港中文教師對本科「專業知識」的自我評鑑，藉以了解中文教師在「專業」上的表現。

優秀的語文教師必須具備相當的「專業知識」。所謂「專業知識」，大致可分為下列兩方面來說：

一、宏觀的「專業知識」：

包括教育心理學、教育哲學、教育社會學和輔導心理學等專業知識。這些專業知識（或理論）可幫助教師了解「教育的精神」，明白「學習的過程」，知道「切足法」和「教育質素」的因素。

二、「微觀的」專業知識：

包括下列三點：

1. 本科知識
2. 教學技巧
3. 對本科課程的了解

由於人力所限，本研究只能探討語文教師在「本科知識」、「教學技巧」及「對課程的了解」等三方面的表現。不過，有關語文教師在「本科知識」方面的「自我評鑑」，研究結果已於1994年發表（何、梁、1994）；而有關語文教師在「教學技巧」方面的「自我評鑑」，將另文討論。因此，本文只集中探討中學語文教師在「對課程的了解」方面的「自我評鑑」。

Goodlad 等人認為課程可分為五大類別（McNeil，1990）：1. 理想課程（ideal curriculum）；2. 文件課程（formal curriculum）；3. 感觀課程（perceived curriculum）；4. 執行課程（operational curriculum）；5. 經驗課程（experiential curriculum）。本文所說的「文件課程」是指由香港教育署課程發展議會所頒佈的「中學中國語文科課程綱要」（1990）、「中學中國文學科課程綱要」（1989）、「高級補充程度中國語文及文化科課程綱要」（1991）及「學中國語文科課程綱要」（1990）等文件。「感觀課程」是指語文教師對「文件課程」理解後，心中認為需要教授的「課程」。

「課程」是「教學」的藍圖（pratt，1980；Johnson，1967），「課程」與「教學」是有相關聯的（interlocking）（Oliva，1988）。為了實踐「課程」的精神，和達到課程設計者的目的，語文教師除了要熟悉、理解「中學中國語文科課程綱要」（1990）外，還要對「教學及評估的中文課程有所認識」。這樣才能符合 Tyler 所說的連續性（continuity）、順序性（sequence）及統整性（integration）（黃炳煌，1981），和 Oliver（1977）所說的銜接性（articulation）、均衡性（balance）及連續性（continuity）等方面的「課程組織」的標準。由此可見，對本科課程的了解，是對中文教師在「專業知識」方面的基本要求。因此，本文將以此為研究重點，探討中學中文教師在下列各方面「自我評鑑」的表現：

1. 對中學中文科課程的認識；
2. 對中學中文科教學目標的認識；
3. 對中學中文科課程「銜接」的認識。

研究對象及取樣

本研究以香港地區中學中文科學的教師及文憑教師為研究對象。寄出問卷的學校數目為110間，佔香港地區中學之32.8%，收回問卷的學校數目為98間，問卷的寄出與回收，均在1993年11月至1994年1月期間進行。本研究採用非代表性樣本（convenience sample），以提高研究效度，特增加問卷數目。本研究寄出問卷1100份（香港地區中學中文教師總人數），收回問卷811份，回收率為73.7%。其中，任教主等程度（Band 1 & 2）學生的教師佔14.5%，任教中等程度（Band 3）學生的教師佔40.4%，任教下等程度（Band 4 & 5）學生的教師佔45.1%。由於人力所限，本文只集中探討香港中文教師對課程的「自我評鑑」。

研究工具

本研究所用之問卷，全由筆者擬稿，經五位香港中文科教師審閱後，製成正稿。該問卷共有題目151題，內容包括教師對專業知識、專業態度、教學方法、信念、專業及學生程度等問題的「自我評鑑」。由於篇幅所限，本文只能集中探討教師對「本科課程」的了解。與問卷有關的題目作分析、比較，其餘的題目則另文討論。

結果與討論

對中學中文科課程的認識

表一：教師對課程的「對課程的評鑑」

題目內容	自我評鑑 %	
	是	否
1. 大部份教育署在1990年頒佈的「中學中國語文科課程綱要」中，對於所應用教材及教學要求都表同意，而無須作任何修改。	10.7	89.3
2. 大部份教育署在1989年頒佈的「中學中國文學科課程綱要」中，對於所應用教材及教學要求都表同意，而無須作任何修改。	6.8	93.2

表一資料顯示：大部份的中文教師表示他們沒有對教育署頒佈的「中學中國語文課程綱要」及「中學中國文學科課程綱要」提出個人意見，更沒有將意見轉達給教育署。由此可見，1. 中文教師多沒有參與「課程發展」的意識；2. 中文教師已習慣了「被動地」接受教育署頒佈的「指令」；3. 教育署與中文教師提供「上情下達」的渠道不理想。

中文科教師對本科課程較為「被動」和「冷漠」，將不利於中文科「課程的發展」，更妨礙了中文科「教師專業」的發展。事實上，教育署在實施新的中文科課程前，曾採用「校」問卷的方式，調查全港中學中文教師對新課程的意見。從本研究可見，教育署所做的調查，未能了解「部份」中文教師（可能是科主任）的心聲，未能達到廣開言路的理想。教育署若能把「校」

問卷」改爲「一人一問卷」，將可全面聽取中文教師對課程的意見，亦可藉此鼓勵中文教師多關心「課程的發展」。

表一 實施課程後，對新課程的了解

題目內容	自我評鑑 %	
	是	否
5. 本人對教育署在 1990 年實施的新一屆中學中國語文科課程綱要，曾詳細閱讀和充分了解。	43.5	56.5
6. 本人對教育署在 1999 年實施的新一屆中學中國文學科課程綱要，曾詳細閱讀和充分了解。	26.6	73.4

表一資料顯示：超過半數的中文教師表示他們對現行新的中學中國語文科課程綱要及它的學中國文學科課程綱要，曾「詳細閱讀」和「充分了解」，可見一般中文教師對教育署所推出的課程關注不足。

教師認識課程的「實施者」，有對實施的課程有所理解（黃政傑，1993），並要積極參與課程發展的工作（在教學中，由於教師「充當」了學生所要學習的「經驗」（黃政傑，1989），因此教師在課程發展中扮演著很重要的角色。教師若能對課程有充分的了解，而又樂於實踐課程的目標，則將可達到 Fullan 和 Pomfret（1977）所說課程忠實觀（fidelity perspective）的要求，即是說，教師所教授的「課程」，是符合課程設計者的意圖。不過，從表一資料可見，一般的中文教師都沒有深入研究課程綱要，因此他們課程的認識不夠全面。他們心中的感覺課程（perceived curriculum）與教育署所推出的文件課程（formal curriculum），可能出現嚴重的落差，使教與學都受到嚴重的影響，而這亦是中文教師邁向「專業化」的阻礙石。

表二 對新課程的了解

題目內容	自我評鑑 %	
	是	否
7. 本人對如何執行新的中學中國語文科課程綱要的要求	57.4	42.6

表二資料顯示：超過四成中文教師表示他們不知道現行新的中學中國語文科課程綱要的要求。由此可見，一般的中文教師對課程最新的發展關注不足，同時，他們對新課程的特點不認識不多。Fullan 和 Pomfret（1977）指出，課程的實施至少應包括下列五個層面的改變：1. 教材，2. 組織，3. 角色（行爲），4. 知識和理解，5. 價值內化。在中文科課程改革方面，新課程雖已實施多年，一般的中文教師多沒有翻閱課程綱要的習慣，他們亦不了解新舊課程的異同，他們只重視「教材」的改變對他們所造成的影響，至於「組織」、「角色」、「知識和理解」及「價值內化」等方面的問題，他們亦不甚重視。正如黃政傑（1993）說：「一般人一想到課程實施，便想到換一套教科書或其他教材來使用」。香港的中文教師對「課程」的態度基本上也是這樣的。

在表一中，有 43.5% 教師表示對新課程曾詳細閱讀和充分了解，但在表二中，有 57.4% 教師表示清楚知道新的中文課程的異同，可見部份教師（約 14%）可能只透過同事或從研討會中得知新的中文課程的異同，至於他們所知道的是否全面，則有待進一步研究。

表三 對中學中國語文科教學目的認識

題目內容	自我評鑑 %	
	是	否
8. 本人認爲中文教師在落實下列教學目標：		
1. 訓練學生聽、說、讀、寫的能力	95.3	4.7
2. 培養學生自學能力	86.1	13.9
3. 提高學生思考分析的能力	89.0	11.0
4. 幫助學生建立正確的人生觀	78.7	21.3
5. 引導學生認識中國文化	83.9	16.1
6. 加強學生對社會的責任感	66.0	34.0

表四資料顯示：大部分中文教師（分別爲 95.3%、86.1%、89.0% 及 83.9%）認爲「訓練學生聽、說、讀、寫的能力」、「培養學生自學能力」、「提高學生思考分析的能力」和「引導學生認識中國文化」等項目都是必須完成的教學目標，這些意見完全符合課程綱要的要求。不過，在「引導學生認識中國文化」方面，由於課程綱要對「中國文化」的範圍及其教學內容均無明確的界定，而中文教師亦多沒有做好這個方面的教學計劃，因此，新課程雖然增加了「引導學生認識中國文化」的目標，但它的效果如何？就頗成疑問了。

另一方面，超過兩成的中文教師認爲「幫助學生建立正確的人生觀」及「加強學生對社會的責任感」等項目不是必須完成的教學目標，這無疑是把「第一語文的教學」變爲「第二語文的教學」，這個看法是否恰當，在此暫不討論，問題的關鍵在於這種教學取向與目前的中文課程綱要所定的教學目標實有相當大的距離。如果課程的執行者對課程目標並不了解，他們在這方面的教學效果自然不會理想。

對中學中文科課程「銜接」的認識

表五：對中學中國語文科課程「銜接」的認識

題目內容	自我評價%	
	是	否
1. 大致明瞭《小學語文科課程綱要》	20.2	79.8
2. 大致知道小學語文科的教學要求	16.1	83.9
3. 大致知道中六（AS-level）中文科的課程範圍	39.0	61.0
4. 大致知道小學與中學的中文科課程連接	18.0	82.0
5. 大致知道中學與中六的中文科課程連接	31.2	68.8

表五資料顯示：約八成中學中文教師表示大致明瞭《小學語文科課程綱要》和不知道小學語文科的教學要求；約六成中學中文教師表示不知道中六（AS-level）中文科的課程範圍，因此，大部分的中學中文教師（分別佔82.0%及68.8%）都不知道中學中文科課程如何與小學及中六課程銜接。西方學者（Mayer, 1987; Pearson, Hansen & Gordon, 1979; Bransford & Johnson, 1972）認為學習者的「已有知識」（prior knowledge）與其需要學習「新知識」有著密切的關係，如果教師未能充分掌握學生的「已有知識」，這對他們的教學工作將有所影響。從表五資料可見，大部分中文教師對小學、中學和中六（預科）的中文科課程所知有限，因此，他們對中文科課程的「繼續性」（continuity）、「順序性」（sequence）和「銜接性」（articulation）缺乏全面的認識，有表四資料之中。

結論

課程是教學的藍圖，也是教學的保障。教師是課程的執行者，如果他們清楚明白課程的內容、意義和目標，則課程「理想」得到實現的機會較大；反過來說，在教學「達標」方面將會出現問題。根據本研究結果，可見目前香港中學中文教師對教育署所頒佈的課程的了解並不深入，對課程與課程間的銜接問題亦甚少過問。教育署應深入探討其中原因，並作出適當的改善，發揮調動中文教師的積極性，鼓勵中文教師多參與「了解課程」、「批評課程」、「設計課程」的活動，從事師資培訓工作的人員在擬定師資培訓「課程時，宜考慮到願受訓的中文教師在這方面的需要，加強他們對中文課程的認識，激發他們的思考，從而提高他們對「課程發展」的興趣。另一方面，中文教師亦宜「走出去」，主動地認識課程，多與其他中文教師作廣泛的思想交流，並將意見向教育署反映，以達「上呈改善語文教學的滿意效果」。

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作者：
何兆賢，香港中文大學教育學院講師

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UNITS 1-6, 6/F, BLOCK B, WAH TAT INDUSTRIAL CENTRE,
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TEL: 2481 1930 FAX: 2481 3379

FIELDWORK IN GEOGRAPHY: A REVIEW OF PURPOSE AND PRACTICE

Philip Stimpson

The University of Hong Kong

This paper outlines the present status of fieldwork within school geography and reviews its purpose and practice. The rhetoric of acceptance is frequently greater than actual practice both in Hong Kong and elsewhere as teachers worry about issues of timetabling, cost, staffing and safety. On the other hand, few geography teachers doubt its value.

The first part of the paper discusses reasons for undertaking fieldwork. These centre on its value in enhancing conceptual understanding and problem solving skills within geography, promoting social skills and encouraging environmental awareness. Specific geographical objectives include: (1) the development of meaningful personal experiences of the landscape; (2) building rich and true images of the world; (3) deepening understanding; (4) increasing pupil interest, curiosity and pleasure in their surroundings; (5) providing opportunities to practice observation and inquiry skills and (6) consolidating learning.

The second part discusses how field experience can be optimised. A distinction is drawn between traditional, teacher-centred field teaching and pupil-centred field research of either a more closed field testing kind or a more open field discovery kind. Fieldwork is just as feasible as a learning activity over a double lesson near to the school as it is as the traditional field-camp in more distant locations over a longer period. The paper stresses the need for careful organisation and clarity in setting objectives in both conducting fieldwork and in follow-up. The paper concludes with a checklist of points to consider when planning fieldwork.

Introduction

"Real geography depends on good fieldwork. It is learned through the 'soles of one's boots.'" (Laws, 1986). Fieldwork is generally felt to be an essential part of learning in Geography. It is often justified as the sine qua non of the subject and indeed has a long tradition going back nearly 100 years (Brunsden, 1987). Its importance can perhaps be gauged from the recommendations of Graves (1980) who suggested that pupils within the Secondary 1 to 3 range should receive up to 3 days of field work per year, those at the Secondary 4/5 stage, up to 5 days and those studying geography in the Sixth Form, 10-14 days. The purpose of this paper is to bring together some of the existing literature on fieldwork that can help practising teachers in their planning.

The Present Situation

Typically it is felt that fieldwork should be an indispensable part of geography courses but in practice it is often insufficiently represented. A recent survey in Hong Kong showed that only in about 1/4 of Secondary 1-3 students were exposed to fieldwork experiences, and even then, usually to only one session per year (Wu, 1992). The situation was somewhat better for Secondary 4 pupils with 2/3 of schools providing fieldwork and in Secondary 6 with about 1/2 of schools. This is not dissimilar to that found by Naish (1984) in the UK among sixth-form students. However, similar to conclusions of McPartland and Harvey (1987) in the UK, few pupils in Hong Kong enrich their answers in public examinations with

reference to fieldwork; class work and fieldwork often seem to be separate experiences. However, this is not to say that pupils' class work does not improve with field work even if links are not readily apparent or no attempt is made to link the two as suggested by Adams and Croft in linking role play with field work (Adams and Croft, 1984).

Fieldwork involves much time and effort on the part of the geography teacher. In 50% of the 132 schools surveyed by Wu, teachers commented on concerns about pupil safety, availability of sufficient teachers, the training of teachers in fieldwork techniques, time, disruption of normal school activities, availability of suitable field work sites and access to Hong Kong Government Field Study Centres. These finding parallel results in the UK where Cooper and Latham (1988) found teachers were most worried about constraints of timetabling, finance, staff and safety regulations. The problems of cost, cost effectiveness and assessment of fieldwork are general concerns among teachers (see Ward, 1987, for a discussion of some aspects of this question).

Despite these concerns, the trend is for more field work. Increasingly, particularly with senior forms, fieldwork is becoming less of a luxury and more of a requirement. Why is it, then, that fieldwork is seen as making such a valuable contribution to geographical education and how can it best be organised to achieve the desired ends?

Why do fieldwork?

Fieldwork must be undertaken as a means to an end and not as an end in itself. It is but one strategy for learning. Geography is about making sense of the world we inhabit and having an 'eye for the country'. But what does this mean in practice? What are the specific reasons for undertaking fieldwork with pupils? McPartland and Harvey (1987), in an analysis of the views of 25 practising sixth form geography teachers toward aims for fieldwork set out by the Geographical Association of the UK (1984), differentiated between subject specific purposes, student specific purposes and student environment purposes (Table 1).

Table 1

Strand A -Subject Specific Purposes
Illustrate theory through real examples and situations
Describe and evaluate geographical form and process
Increase awareness of the functioning of environmental systems
Develop interdisciplinary understanding
Introduce a systematic and scientific investigation method through hypothesis testing
Introduce quantitative and qualitative data collection and analysis techniques
Strand B - Student Specific Purposes
Provision of a residential experience away from home
Develop skills in problem solving
Promote social skills through team and group work
Strand C - Student-Environment Purposes
Promote a conservation ethic
Develop an awareness of environmental issues
Encourage environmental empathy

Table 1 Some purposes of fieldwork as emphasised by sixth form teachers (Source: McPartland and Harvey, 1987)

At the heart of these subject specific and environmental purposes is the desire that pupils should be involved in activities which provide first hand experience. Without this, geography would rather be like knowing how a car engine works without ever seeing an engine.

> 'grey is all theory
> green grows the golden tree of life'

One component of field work is for pupils to move away from the cramping confinement of the classroom... into the permissive and unexpected resource of the open environment. For them, surprise is a romantic experience....To answer the question 'Why fieldwork?' in terms of planning and design, that is to answer it within a limited definition of rationality, is to introduce grey into green and to reduce the contrast upon which motivation from romance stems." (Hall, 1976, p. 249)

Fieldwork brings to geography students **meaningful personal experiences.** Learners learn in a context of personal significance. The key words here are 'meaningful' and 'personal'. We may, for example, show our class photographs of old and new industrial areas in a city to make the point that different sorts and scales of industrial enterprise are differently located in the urban area. We might in the case of Hong Kong provide photographs of small metal workshops in an old urban district such as Wan Chai and photographs of a recent industrial estate in a new town such as Tai Po. Yet

photographs cannot convey the sounds and smells of 'cheek-by-jowl' living in Wan Chai in comparison with the space and relative quiet of Tai Po. The problems of Wan Chai and the need for relocation become more vivid through the personal experience of walking the streets.

Fieldwork, because of its first hand contact with our surroundings has a vital role to play in the process of **building rich and true images** of the world. Fieldwork brings into play all the learning senses whether sight, hearing, smell or touch. Abstract concepts such as interaction come alive and have meaning through concrete experience. Pupils, it is hoped, will gain not just knowledge of the landscape but a feeling for the landscape be it urban or rural.

Personal experience heightens awareness and deepens understanding of places, distinctive ideas and concepts. It is all too easy to assume pupils have visited places which may only be a few kilometres away. Research shows children in fact do not frequently travel large distances from the home and when they do they are often deficient in the sort of observation hoped for. Personal experience, rich images and heightened awareness all help pupils to give meaning to geographical events and patterns. The 'filing cards' which are written within the brain become more vivid and ordered. Consequently ideas are more easily remembered. It is from observing the local area that pupils create points of reference, or models, so that they can understand more distant and unfamiliar places (Birrell, 1968).

Fieldwork offers a basis to **arouse pupils' interest and curiosity and pleasure in their** environment, and to provoke pupils to ask questions and identify problems. For this reason, fieldwork can be a useful way of starting a teaching unit. It provides opportunity for participation in the learning process at the outset; learning starts with their findings. Its motivational value can enhance the engagement of pupils with the learning task. Alternatively, fieldwork can offer the pupil the chance to illustrate and apply what has already been taught in the classroom thus **consolidating learning.**

As important (and some might say more importantly) is geography's role as a school subject in helping pupils to *"learn how to learn about making sense of the world"*. Fieldwork provides opportunities for pupils to look, think, record and analyse and in particular to:

- practice the difficult **skills of observation** involving naming, describing, sorting the relevant and necessary from the irrelevant and extraneous;
- **practice map work skills** such as orienting the map, defining position, etc.
- develop **skills** in using measuring instruments **to collect data**, and in data recording, analysing and presentation;
- develop skills in **applying concepts** to interpret the world around.
- develop skills in generalisation and model building.

Finally the **social value** of fieldwork should not be forgotten. Fieldwork is generally a co-operative endeavour. This is not unique to fieldwork but in fieldwork the need for children to help each other either in collecting information or just organising life in general seems to come to the fore. (See Smith, 1987, for a further discussion of this.) We sometimes see an altogether different side of children out in the field.

What different forms does fieldwork take?

The answer is many and varied. Everson (1973) made a useful distinction between traditional field teaching (observation) approach and a field research (investigation) approach.

Traditional field teaching often takes the form of an outing in which the teacher directs attention towards and explains features in the landscape. Pupils may take notes, answer oral questions, sketch or complete a work-sheet but in essence the event is teacher dominated with little opportunity for input from the pupils.

For example, we might take our class on a tram ride from the Kennedy Town Depot to North Point. Travelling out of the depot and into Queens Road past all the shops selling dried fish products we might talk about the land use of this area as reclamation has seen the loss of the fish docks but that many of the old enterprises which were set up when the docks were functioning still remain. Coming into the Western market,

we ask our children what sort of land use is now found looking to emphasise the changes taking place as central business district expands. In central we point out the major shops, banks and offices that are to be seen and the old colonial core. We explain how this area started out. Etc.

Sometimes such field-trips take the form of a general 'tour' around an area with limited focus and a pot-pori of new knowledge. The example above contains elements of historical geography and contemporary variation in functions. Field work often becomes in effect field demonstration in which the teacher reinforces previous class-work. Alternatively the pupils make records that will be taken up in subsequent class-work; this may involve more pupil work but the tasks tend to be highly circumscribed by directives and what is discovered is by teacher intention. The organisational structure tends to be tight. Many examples abound and can be illustrated by Keung (1986) in his suggestions for field study in Cheung Chau which involves pupils completing a work-sheet at set points along the route focusing on the varied features illustrated by the area. A similar approach is in Duffield and Hardcastle's (1983) account of their field trip to Tunisia. This largely 'Look and See' type of field work came under criticism in the 1970s but can have value particularly where the experience of the pupils is very limited and the main aim is to foster a geographer's curiosity. Indeed Martinez and Patterson (1988), working in a Malaysian context, have made a plea for a reappraisal of the value of such traditional fieldwork. The problem one suspects is more to do with how such fieldwork is conducted rather than the approach itself.

Field research, a term coined by Board (1965), is generally problem orientated and may be issue oriented. At the centre of this is often the setting of hypotheses or potential solutions/explanations. The work in the field then proceeds towards collecting data which can be used to *support or reject propositions*. The fieldwork is structured towards a conclusion and techniques such as survey and statistical analysis fall into their proper place as tools to handle data within the confines of a geographical question. An hypothesis testing approach can be illustrated by a piece recently shown to me. The teacher was concerned with sixth-form urban geography and, specifically, the location and clustering of particular activities (in this case antique shops) within the city. The essence of the structure which is shown in Figure 1 comprises: (i) deduction of the likely spatial pattern of antique shops and factors which may have determined it, (ii) the collection of data that might support such contentions, and (iii) analysis of how far the data in reality does support suggestions and what alternative propositions may be appropriate.

Today there is a broader perspective to research approaches than Everson envisaged twenty years ago. The Geographical Association Sixth Form-University Working Group in the U.K. drew attention to humanistic approaches (Geographical Association, 1984) and noted a need for field work which gives greater attention to values and attitudes. Pocock (1983) earlier had written of an experiential perspective in which the richness of environmental engagement and the role of different senses are highlighted. "It is to talk of experiencing and feeling as well as thinking as forms of knowing" (Hall, 1986, p.153). Such an approach uses more interpretative rather than scientific positivistic strategies. Goodness of fit with known models is not an aim. The difference is well drawn out in Maher's paper on alternative fieldwork approaches with three different emphases, namely 'about', 'through' and 'for' the environment (Maher, 1984).

Examples of this approach with an emphasis on gender differences in attitudes to urban space is provided by Madge (1994) using adjective list and more generally by Hall (1986) who among a number of techniques used rating scales.

Figure 1

Factors influencing the location of antique shops on Hong Kong Island

Proposition A function such as antiques shops is highly specialised and therefore requires a relatively central location. However, at the same time, the scale of operation and profits mean that areas of very high rent in the city centre will often be inaccessible to owners. Further, shops such as antiques shops are likely to cluster to gain advertising advantage of a well established centre with a high reputation.

Method

1. Using data from the telephone business directory, locate the position of antique shops on a base map. Comment on the distribution and note the clustering.

2. Examine the location of clusters with reference to distance from the urban core at the Pedder Street-Queens Road intersection in the light of a bid rent curve model for various land uses.

3. Go to the main cluster in Hollywood Road and find out from shop owners: (a) what advantages are offered by a location in Hollywood Road; (b) why they do not locate elsewhere, e.g. Pacific Place; and (c) what are the advantage of being located near to other antique shops.

4. Discuss findings in 2. and 3. with reference to the proposition above. How far do the findings provide evidence in support of the suggestions made?

Figure 1 An example of hypothesis testing fieldwork in an urban area

Pocock urged the reintroduction of sketching because it teaches pupils how to see and the subjectivity of seeing for which the camera is no substitute. A sketch is the geographer's interpretation. Extending a similar idea into Hong Kong, Figure 2 sets out a piece of fieldwork design to help pupils appreciate that different places evoke feelings and different people look on places in different ways reflecting a myriad of awarenesses of environmental quality. A word list is used in the example but it will be recognised that opposites are included in the descriptor and a Likert type rating scale could also be used.

Hall (1976) further distinguished two categories in field research differentiating between field testing and field discovery. In the former, the teacher sets the problem, directs pupils towards specific hypotheses and control is generally tight. In contrast, inquiry is open in field discovery, and the theme, hypotheses and mode of working are left to the choice of the pupils. In field testing, pupils act as a researcher and the teacher as a laboratory supervisor standing on one side watching to ensure problems do not ensue. This is perhaps the more common; an example of this is provided in Barraclough's exercise for A Level in which students measure and compare particle shape, size, sorting and composition to deduce the glacial-periglacial history of an area (Barraclough, 1992); see also Bowden (1990) on beach profiles. In field discovery, the role of the teacher is one of a consultant encouraging and facilitating pupil endeavour; as this is largely, or totally, in the hands of the pupils outcomes are often divergent and unpredictable.

Figure 2

Environmental quality around Aberdeen

The purpose of this work is to assess the environmental quality in 4 parts of Aberdeen. There are no right or wrong answers; each person will have his or her own answers.

1. Visit the following areas:
   (i) the Wong Chuk Hang Industrial area (GR 850122)
   (ii) Aberdeen Centre (GR 340123)
   (iii) the Shek Pai Wan Estate (GR 343125)
   (iv) the Aberdeen Reservoir (GR 345130)
2. (a) At each place, select words from the list below and others that you can think of) which best describe the environment FOR YOU.

abused, beautiful, cared for, concrete, congested, cosmopolitan, crowded, clean, depressing, dirty, empty, invigorating, friendly, futuristic, green, grey, healthy, historical, hostile, lively, mossed, modern, muddled, monotonous, natural, noisy, ordered, ordinary, oppressive, peaceful, polluted, prosperous, poor, quiet, rural, scenic, shabby, smart, smelly, stimulating, tiring, traditional, tranquil, ugly, urban, varied.

(b) List features in the landscape at each place which contribute to your view.

Figure 2 An example of field work with a subjective interpretive basis using a humanistic approach

How can fieldwork be arranged?

There is often a tendency to think about field-work as "a week's field camp" perhaps at a field study centre. To be true many of these centres are excellent but they can be expensive and difficult to book. Table 2 below, which is based on an original idea from Bartlett and Cox (1982), sets out some of the fieldwork options of much shorter duration and nearer the school.

The important point is to recognise just how much

Table 2

Time	Type of Fieldwork	Ideas for activities in the field	Typical questions
INDEPENDENT PUPIL FIELDWORK PROJECTS OVER A FEW WEEKS	THE SCHOOL or LOCAL AREA Mainly in the form of a geographical enquiry	Service provision: spheres of influence; land use change; river profile	What is the sort of services offered by small town X in comparison with city Y?
SINGLE LESSON	CLASSROOM Data supplied by pupils from their own experience or homework exercise	Patterns of movement: transport & distance; jobs; shopping patterns	What different types of transport are used & when? How do we define a neighbourhood?
SINGLE LESSON or TWO LESSONS END ON	THE SCHOOL	Weather perception & measurement; microclimate; map reading; observation from the school	What differences in temperature are found around the buildings and why do they occur?
TWO LESSONS HALF or FULL DAY	LOCAL AREA Urban fieldwork Orienteering Urban trails	Urban hinterland; land use; pollution studies; shopping habits; slopes and slope protection; map reading	Where do people shop? Is there a hierarchy of shopping centres? How do levels differ?
USUALLY 2 or MORE DAYS	FIELD CAMP, EXPEDITION	Industrial area studies; rural studies; ecosystems coastal studies	What sort of industries are found? What are the important factors?

Table 2 Types of fieldwork based on arrangement (Expanded from a table in Bartlett and Cox, 1982, p.128)

can be done in short periods of time around the school. If this direction is taken then many of the teacher worries highlighted by Wu in her survey start to disappear. For example:

- Pupils bring into classes experiences of their surroundings which if drawn out and ordered can provide the basis for concept development. Moreover, pupils are a potential source of information about sorts of jobs, shopping patterns and transport and recreation habits. The problem, of course, is variation in experience particularly with family background, some of the difficulties here can be got around by setting observation tasks for homework.
- Many schools afford stupendous views over their surroundings from balconies, etc which can be used for tasks such as landscape sketching. The play-ground offers potential as a laboratory for microclimatic investigations or practice in using maps to follow a route through orienteering where pupils navigate themselves as quickly as possible from one point to another with the help of a map and compass. Recording of geographical features along the route can be added to the map reading exercise. Fenoughty and Collins (1992) provide a good example of how the school grounds can be used in the study of weather with children aged 11 to 14 years in which pupils make a weather map of the school illustrating how wind direction, speed and temperature varies with aspect and exposure.

Murgatroyd (1985), working in the area around the school, provides an example at sixth form level how rates of weathering can be examined by pupils rating the degree of weathering on gravestones (0 -unweathered; 1 - Slightly weathered with faint rounding of letters;.. to 4 - very badly weathered with letters barely distinguishable) in relation to the dates shown on the stone. Obviously any construction that can be dated could be used.

- Urban or rural trails around the immediate vicinity of the school to record land use change is another form of field work that can be done from the school with minimal disruption. For example, a trail might be constructed in a loop across major land use changes (a transect) in the urban area perhaps with reference to distance from the city centre or transport routes or variation in relief. The key to success with such trails is to have a clear focus and a limited number of stops. Avoid the tendency to add points because they are of "general interest"; the focus needs to be maintained.

Independent Pupil Fieldwork Projects are now required or encouraged by a number of examination authorities and in many curricula. An interesting example from a pupil's view is given by Jones (1989). Dove's survey (1987) of pupil attitudes to project work showed that most pupils found it was valuable, a good use of time and, particularly amongst girls, enjoyable. Staff also thought it valuable but some worried about the language ability of pupils and the capability of weaker pupils with regard to propositional thinking.

Such work involves pupils carrying out geographical investigations on their own. This is a reflection on an emphasis in the teaching of geography on process (knowing how) and learning how to find out about one's surroundings rather than a sole emphasis on knowledge (knowing about). To be successful, experience suggests that the fieldwork needs to be well structured although not so tightly as to restrict pupil initiative and thinking. Laws (1986) outlines a problem based framework (Table 3) for independent pupil fieldwork which many curricula have promoted as useful. In essence, it uses a field research approach. One of its values is that it helps to focus the attention of the pupil and so prevent the masses of unwanted or marginally relevant data that often result from descriptive studies. Selecting an appropriate topic is critical and thus often pupils will be invited to select a project from a list provided by the teacher which are considered feasible and manageable.

How is fieldwork organised?

Table 3

Stages	Example for Lower Secondary
1 ***Topic Selection*** *Level problem*: pollution, traffic congestion, urban redevelopment, rural land use change. *Theory testing*: urban or rural land use model, sphere of influence.	
2 ***Problem Definition*** as a clear concise question which is feasible and manageable for a child of that age to investigate.	Why is air pollution greater in district A than in district B?
3 ***Data Collection and Recording*** including the planning of the method to be used and realising its limitations.	Collect data on number of vehicles per minute in the two areas. Record type of vehicle (lorry, taxi, minibus, bus, car) and type of fuel used (diesel, petrol).
4 ***Data Analysis*** to simplify and order the data so that patterns and relationships or comparisons become apparent. Particular emphasis is given to graphical techniques, e.g. drawing of maps, bargrams, etc.	Draw a bargram of vehicle frequency by type and by fuel on base map showing the two areas.
5 ***Conclusions*** regarding the problem in the light of the evidence collected.	Pollution levels are higher in the area with the larger number of diesel burning vehicles in particular lorries and minibuses.

Table 3 — A framework for independent pupil fieldwork after Laws (1986).

1. Be clear about objectives. Exactly what do you want the pupils to gain? Illustration of class work or the practice in problem solving skills or the ability to set up and test hypotheses or a feeling for an area and its people or what? How will it fit into the whole year's work of the pupils. What contribution will it make to their geographical understanding? Prepare a check list of things to take care of; Lloyd (1985) offers a common sense suggestion as does Fung (1992).

2. When you have decided on the field study task and the area in which the study will be carried out, read up about the area and visit area to assess feasibility. Know what the pupils may expect to observe even if a field discovery approach is adopted. The use of fieldwork guides is a definite second best. Think carefully about the objectives in the context of the ability of the pupils and the time and resources available. Plan what you will do, the points to visit and the activities in each. What method will be used to collect data? Mapping exercise? Transect? Field sketch? Rating scale? Questionnaire? Assess what prerequisite knowledge will be needed. Walk any routes to be taken by pupils and double the time that you took? What supplementary information will you need to set up the tasks? Think what you will do if the weather turns bad? (Pupils cannot field sketch in thick fog!)

3. Cost the fieldwork and make the initial arrangements. The particular problems of organising overseas field expeditions are reviewed in Fenoughty (1992) and Barker (1984) who recount their actual experiences and by Duffield and Hardcastle (1983) who used a commercial tourist package to visit Tunisia from the UK.

4. Check with the school, the Education Department and other authorities concerning field work and safety codes. How many supervisors will be needed? What qualifications do they need? Discussions of fieldwork safety are to be found in Horsfield and Richardson (1986) and by Howard (1986) as well as Authority Handbooks to which final reference on regulations should always be made (see in Hong Kong, Advisory Inspectorate, 1992).

5. Advise parents. The letter should request their permission, note that all possible care will be taken but teachers will not be liable for injury, etc and ask for information on any present illness.

6. Prepare necessary pupil materials e.g. data recording sheets. What implications for resources are made by the field methods selected, e.g. what base maps are needed? What transect diagrams? Make up a first aid kit.

7. Prepare pupils for the work. In the briefing consider what concepts, background knowledge, skills, equipment and rules of behaviour are needed. What pre-reading do they need to do? Set work so that you can be certain that they have mastered the knowledge and skills needed. Ensure pupils realise the need for accurate and careful recording.

8. Outline to the pupils the purpose of the work and pattern of work. Establish any working groups that will be needed and ensure each pupil knows his or her role. Inform pupils what they need to bring (footwear, clothing, food, etc.).

9. During the field exercises the teacher's role very much depends on whether a field teaching or field inquiry approach is adopted. If the latter provide assistance as necessary and help pupils by raising key questions which will help to keep them on track. Avoid telling. Take note of changing conditions, e.g. weather, and take appropriate action.

10. Follow-up is vital to consolidate what has been learned and to put it in the context of class work. What questions have been left unanswered and thus what additional information is needed?

Conclusion

A final point is perhaps best summed up in the following comment from Laws:

> Despite...warning about the problems and constraints associated with fieldwork it should never be forgotten that perhaps the most meaningful and lasting learning takes place when students are actively participating in exploring the great variety of environments around them. In addition the field-

work experience provides opportunities for teachers and students to get to know each other and interact outside the structures (and strictures - author) of the classroom and the school yard. (Laws, 1986, p.116)

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Author

Philip STIMPSON, Senior Lecturer, The University of Hong Kong.

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Preparing "Small" Environmentalists Through Activity-based and Interdisciplinary Environmental Teaching

Tammy Kwan

Queensland University of Technology

Using the intentions and guiding principles of the Belgrade Charter and Tbilisi Declaration as framework of reference, an activity based interdisciplinary approach is reinforced to teachers teaching environmental education. It is believed that such teaching approaches are more appropriately used to prepare all students to become "small" environmentalists - at their own living environmental setting. Students learning from such an approach would benefit from developing into an all-round person to exercise their concerns, responsibility, commitment, love and care of the environment and hence can help to fulfil the intentions of preserving the environment for future generations.

Introduction

Discussion about environmental education started roughly in early 1960s when most of the industrialized countries began to feel the threat and destruction done to nature by the escalating human-made activities such as pollution and deforestation. Worldwide attention was drawn to these issues and political leaders were urged to take action to conserve the environment for future generations.

Despite the diversity of opinion about who should do what over these environmental issues, it is generally agreed that one of the prime ways of taking care of the environment is through education to learners of all ages, in particular the youngsters, to promote positive attitudes and actions to appreciate the importance of nature and to safeguard the environment from further deterioration.

Environmental education first appeared as attached programme in other subjects such as biology and geography in the form of the study of environmental sciences and problems. Learning outcomes were found to be discrete, unrelated to real situations and teaching tended to be content-based, emphasizing the acquisition of environmental facts and knowledge. Skills were hardly touched upon and attitude development was not mentioned. Despite the educational importance of environmental studies written about in many national curriculum documents and syllabuses, surveys showed (Eulefeld, 1991 ; Ramsey, 1992 ; Shipstone and McCord, 1991) that most of the claimed environmental education programmes were still seen as an extension of a few popular and related subjects and were dealt with by conventional teaching emphasising mainly knowledge. This means that students in schools are normally confronted with issues of environmental science or protection in the context of individual subjects but not in any inter-related form across subjects. Therefore they do not see the interrelationship between acting in one subject perspective with that of another one.

Eulefeld (1991 : 302) proposes two aims to environmental education. They are to "enhance pupils' environmental awareness and to motivate them to behave in a more environmental friendly way". How far these aims can be achieved is still a matter for debate but it is almost universally admitted that people's environmental awareness is directly related to their willingness to act. Yet this does not mean that greater awareness automatically leads to more

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environmental friendly behaviour. The mere accumulation of knowledge about the natural environment does not correlate with appropriate environmental behaviour. It is the education of the young pupils *in* the environment through developing all kinds of hands-on skills and experiences that promotes the notion of educating youngsters to act *for* the environment as well. Tilbury (1994) stresses that the teaching of environmental education has got to involve both heart and hands but cannot just rely on the head if one wants to really promote an all-round environmental education.

It is reported by recent research done in Germany (Eulefeld, 1991) that students' awareness of environmental issues is normally described as average rather than outstanding. It was found that students were more aware of and showed greater concern to national and global problems than to their own local and regional problems. This was due to the fact that the mass media tended to cover major themes which had little direct bearing on students' personal experience. Hence, it may be ambitious to expect all students to become "big" environmentalists who seek to solve large-scale environmental problems. It is, however, very practical to train every youngster to become "small" environmental participant to at least care for his/her own backyard.

Therefore, the aims of this paper are to :

(1) echo with other renowned environmental educators (SEEC, 1987; Shipstone and McCord, 1991; UNESCO, 1985) on what can be expected in schools with respect to the goals and principles of teaching environmental education;

(2) draw attention to teachers that we are able to train students to become "small" environmentalists who love their own "backyard" environment and can acquire the appropriate skills to take relevant action to work for their "backyard" environment;

(3) reinforce the central idea of adopting an activity-based and interdisciplinary approach to deal with local environments and the related issues; and

(4) provide an illustrative work-programme example using activity-based and interdisciplinary approaches to design a curriculum unit for primary students.

What are teachers expected to achieve through the teaching of environmental education?

Long before the term environmental education came into popular use, there were subjects like nature study and rural science to deal with environmental issues and studies. Nevertheless, the methodology of teaching these subjects was mainly limited to the transmission of factual knowledge about the environment. But then, worldwide interest in environmental issues emerged in the late 1960s leading into 1970s and the Belgrade Charter and the Tbilisi Declaration which gave a framework and a direction to what and how environmental education should develop. It was a time referred to as the decade of environmental education (UNESCO, 1985). It was during this period that countries began to incorporate elements of environmental education into existing education programmes which were dominated by traditional subjects such as general science, biology and geography. At the same time, the United Nations focused attention on environmental education at an international level by hosting the first United Nations conference on Human Environment in Stockholm of Sweden in 1972. This conference highlighted the need to develop a sound environmental education at an international level. One of the recommendations of the Stockholm conference led to the formation of the United Nations Environmental Programme (UNEP) (UNESCO-UNEP organised the 1975 International Workshop on Environmental Education in Belgrade. The most notable outcome of the Workshop was the Belgrade Charter, a statement which provided guidelines and a framework for global environmental education (UNESCO,1985).

The UNESCO goals for environmental education, drafted at the Belgrade conference (1975), were to :

1. develop a world population that is aware of, and concerned about the environment and its associated problems;

2. ensure the opportunity that every person has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively towards solutions of current problems and the prevention of new ones; and

3. create new patterns of behaviours of individuals, groups and society as a whole towards environment.

With these goals in mind, five interrelated categories of objectives were developed. These objectives (UNESCO-UNEP, 1978 : 3) are to raise awareness, provide knowledge, acquire attitudes, enhance skills and encourage full participation from the learners in protecting the environment from further deterioration.

In 1977, at the Inter-government Conference on Environmental Education held in Tbilisi of U.S.S.R., recommendations were made for action which may be undertaken at a national, regional and international level. "The declaration and recommendation of the Conference, considered to be the most important single document on environmental education, outlined a substantive structure, policies and strategies for environmental education." (UNESCO, 1985) . The Tbilisi conference (1977) produced twelve guiding principles for teaching environmental education. They are to :

- consider the environment in its totality - natural and built, technological and social (economic, political, cultural-historical, moral, aesthetic);
- be a continuous lifelong process, beginning at the pre-school level and continuing through all formal and non-formal stages;
- be interdisciplinary in its approach, drawing on the specific content of each discipline in making possible a holistic and balanced perspective;
- examine major environmental issues from local, national, regional and international points of view so that students receive insights into environmental conditions in different geographical locations;
- focus on current and potential environmental situations while taking into account the historical perspective;
- promote the value and necessity of local, national and international cooperation in the prevention and solution of environmental problems;
- explicitly consider environmental aspects in plans for development and growth;
- enable learners to have a role in planning their learning experiences and provide an opportunity for making decisions and accepting their consequences;
- relate environmental sensitivity, knowledge, problem-solving skills and values clarification to every age but with special emphasis on environmental sensitivity to the learner's own community in early years;
- help learners discover the symptoms and real causes of environmental problems;
- emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills; and
- utilize diverse learning environments and a broad array of educational approaches to teaching/learning about and from the environment with due stress on practical activities and first-hand experience (UNESCO-UNEP, 1978: 3).

This set of guidelines or principles exerted a prominent influence upon the environmental educators to translate these ideologies into the practical environmental education curriculum highlighting the critical approach which materializes the Belgrade and Tbilisi intentions.

"The Belgrade Charter on environmental education stressed the need to consider the environment in its entirety by looking at natural and man-made aspects of the environment, along with political, economic, technological, social, cultural, aesthetic and legislative dimensions of the problems." (Park, 1984 : 6) . Environmental education does not seek to make life tidy but to study the interaction of a host of functions and participation. Holism is best to achieve from interdisciplinary and multi-disciplinary orientations in environmental education. Environmental education has long been confined to existing subject compartment for ease of timetabling purpose. No one discipline, however, can possibly embrace all the necessary concepts and techniques relevant for effective environmental education. A range of allied disciplines need to be fused for holism. Yet most disciplines are reluctant to do this because they do not wish to jeopardise their academic respectability and acceptance. Park (1984) proposed a coherent approach to environmental education which requires teachers to provide a mixture of the established disciplines and relies on the active participation by students in the learning process to provide the necessary coherence of holism.

To achieve such a holistic view, the philosophical foundation for environmental education rests on problem solving and decision making which involves students with

regular hands-on experience throughout their learning process in school. Students need to be presented with real problems, issues, queries in their immediate localities in order to prepare them to deal with broader environmental problems which affect not only individual but the broader community at national, regional and international level. The search for a suitable environmental ethic has proven to be difficult. Yet such an ethic should embrace plants, animals and humans. The long-term task of teachers in environmental education is therefore to foster and reinforce students' attitudes and behaviours which are all compatible with such ethic which truly enhanced the spirit of the Belgrade Charter and Tbilisi Declaration.

What are we after - "big" or "small" environmentalists?

If teacher educators and teachers were to take seriously the goals, objectives and guiding principles set by the Belgrade Charter and the Tbilisi Declaration, one should realize that the target of offering an environmental education programme is to provide the best opportunity to each child to become a sensible, well informed and responsible "small" environmentalist or practitioner. Looking around to most of the existing programmes, as indicated in the surveys done by Euleteld (1991), Ramsey (1992), Shipstone and McCord (1991), most of the environmental education programmes were seen as taught conventionally in an academic factual acquisition manner. The purpose of such programmes seemed to have been geared toward the preparation of students to become "big" environmentalists. That all will become academic experts in a particular field in the environmental science area, for example, ozone depletion, acid rain, wildlife preservation etc. Yet, what about those who do not want to become "big" names in the environmental education setting? Does it mean that their chance of being environmental educated will be taken away or that they don't deserve the opportunity to become a practitioner to work *for* their own environment?

Similar to Euleteld (1991), Hogben and Wasley (1989) also highlighted the practical importance of environmental education in helping children develop into adults who will be caring about people and the environment, socially responsible, inventive and adaptable to stress and change. Hence the common and long term goal of environmental education should prepare every child to become a "small" environmentalist in his/her own local setting so that each of them would exercise his/her responsibility in caring for the environment. Some of these "small" environmentalists, if capable and motivated, could become "big" environmentalists to take up special training in their selected area.

So what are "small" environmentalists? This concept has two meanings. "Small" means that children can be trained from their young age to become responsible and informed environmentalists who care for their environment. In terms of functions, every body in the community can become a practising environmentalist. Everybody in the community plays a vital role in enhancing the day-to-day protection and nurturing of the environment. Everybody functions like a piece of small part of a big machine. We need to be careful to make sure that every small part in the machine, every small member in the community, receives the best attention to enable each to perform his/her role accordingly and appropriately. In summary, "small" is fundamental, important and of utmost relevance in preparing every youngster to perform his/her critical role in their own environmental setting.

Young children are inherently very practical and curious about their own immediate surroundings and the resultant experiences. Their "backyard" environment is somewhere they visit every day. Virtually anything that goes wrong in their backyard will immediately attract their attention to query what has happened, why it happened that way, what can and should they do to bring the "backyard" back to a normal and healthy condition. So essentially, the preparation of young children to become "small" environmentalists is basically to motivate them to treasure, love and care for their own "backyard" first. Their "backyard" is the immediate area where everybody can start practising their care and concern for the environment. It is real to them and they can easily appreciate their own effort devoted to maintain, save and protect their immediate "backyard" environment. By so doing, all "small" environmentalists, be they young children or adults, can see how their own valuable contribution can impact upon nature in their own "backyard" to make it prettier, healthier, and sustain it for a longer time.

How do teachers prepare "small" environmentalists in schools?

As mentioned earlier, young children are inherently curious about their own surroundings and their experiences in these areas. They like to ask lots of questions about their environment. They can produce with incredible wonderful imaginative solutions to problems that they encounter. Yet these suggestions are often beyond the expectation of the adults. Children can think constructively, imaginatively and productively in many ways about the questions, challenges and problems concerning the environment that they identify, create or encounter.

Environmental education is education ***about, in*** and ***for*** the total environment. Environmental education is about the involvement ***of head, hands*** and ***heart*** (after Tilbury, 1994) . Ramsey, Hungerford and Volk (1992 : 36) echo the Tbilisi Declaration and make a case for the environmental education be designed to prepare individuals to be responsive to a rapidly changing technological world, to understand contemporary world problems, and to provide the skills needed to play an effective role in the improvement and maintenance of the environment. They stress the significant needs to incorporate environmental education into the many aspects of the environment such as natural and man-made, technological, social, economic, political, cultural and aesthetic. They see the environmental education curriculum must emphasize and bridge from the personal, local and national to the global in linking the actions of today with the consequences of tomorrow. Preparation of such a curriculum programme on environment education should encourage young children to develop the following attributes using the 3Hs as advocated by Tilbury :

- **Awareness:**

Children acquire an awareness of and sensitivity to the total environment.

- **Knowledge:**

Children, through a variety of learning experiences, acquire a basic understanding of the environment.

- **Attitudes and values:**

Children acquire a set of values an feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.

- **Skills:**

Children acquire the skills to identify and understand environmental issues and to participate in environmental improvement and protection.

- **Acton:**

Children are provided with opportunities to be actively involved at an appropriate level in environmental improvement and protection, in particular, their own backyard environment.

To achieve these goals, Engelson (1986) asserts that environmental education programs are seen to move towards a number of orientations, namely action-oriented, continuous articulation, experiential, future-oriented, globally-oriented, holistic, interdisciplinary, issue-oriented and neutral. With these characteristics coming together, there is no one particular subject that can claim to deal with the environment thoroughly and provide adequate training to prepare children to become "small" environmentalists.

Teachers, school administrators and curricula planners of environmental education must face with the dilemma of fulfilling all these needs. Ramsey, Hungerford and Volk (1992 : 37) raised four good questions for us to consider. They are :

1. How can environmental education curricula be reasonably framed?
2. Can appropriate new courses be inserted into the existing congested curriculum?
3. Can appropriate environmental education strategies be infused into existing curricula?
4. Can existing curricula be appropriately modified to become "environmentalized"?

The quick answers to the four questions is yes and that interdisciplinary approaches through both integration, insertion and infusion is the direction to go for a comprehensive

and systematic curricular package.

An integrated interdisciplinary approach to environmental education emphasizes the drawing of content from all disciplines. To state simply, Ramsey, Hungerford and Volk (1992 : 40) refer to the integration of content and skills into existing courses in a manner as to focus on that content and skills without jeopardizing the integrity of the individual disciplines themselves. Such integrated interdisciplinary approach has the following advantages :

- the opportunity for children to be involved all the time and at all stages of their schooling;
- the opportunity for children to pose, raise and identify questions themselves in all related subject areas and work toward answering these questions;
- the opportunity for children to imitate and engage in activities; and
- the opportunity for children to be involved in the evaluation of their own learning.

In everyday life, we do things in a holistic way. In a curriculum context, particularly in the early childhood and primary setting, learning is an experience or set of experiences that cuts across subject boundaries. Any starting point can structure the learning experience, so long as it makes sense to the learners themselves. Pike and Selby (1990 : 41-42) and Kick (1993 : 29) suggest how environmental education is linked up with key learning areas across the curriculum to enhance holistic realization. (See Table 1).

Table 1 Interdisciplinary links with environmental education

	Language	Mathematics	Science	Technology	History and Geography	Studies in Society and Environment	The arts	Health and Physical Education	Creative and recreational arts	Religious Education
A / / /

such programme must be to respect the integrity of the scope and sequence in a manner that guarantees the teaching/learning involved proceed logically across all disciplinary areas. Often, this can be accomplished by teachers working independently of others but often it necessitates "cooperated team teaching" through out most part of the programme.

There should be **good relationship** between the teacher and the students in the classroom. Genuine care and understanding influence positively the attitudes and feelings for everyone involved in the classroom. The students should be encouraged to talk about their opinions and they are likely to feel valued if their articulation is well received, respected and accepted by others. This is likely to foster a trustful relationship between teacher and students, and amongst students as well. The more they articulate their ideas and feeling, the better it is for them to conceptualize and draw relationship between the environmental ideas.

If the opinion is valued by their peers and the teacher, the child feels himself/herself to be an **important element** in the class. The child is no longer a passive recipient. He/She is an important part in the process of environmental contribution and that gives a strong sense of achievement. Even if there is a "mistake" made in the decision, it will be taken positively by the whole class that everyone virtually learn something useful from the "mistake". Such a supportive atmosphere will certainly encourage the children in the class to be willing to take up more and better environmental responsibility for their learning and subsequently even to participate in the planning of the related environmental activities as well.

To enhance such responsibility and activities, the children have to grasp fully **the skills of inquiry** which means generating questions, researching for information, working together, interpreting the information collected, predicting the possible outcomes, drawing conclusions and making decisions etc. This will be achieved through group work instead of individualised learning. The purpose is to make sure there is true communication and discussion for application of the environmental knowledge to related environmental issues and problems among the students and the teacher.

In a truly supportive learning environment, children have the opportunity to experience, explore, experiment and **play** freely with a variety of materials, equipment and activities. Children need time to practise new skills in order to achieve competence. But when play is integral to the learning programme, they become so much involved and can gradually master the various kinds of skills that we want them to develop.

The environmental education curriculum has got to offer comprehensive and **balanced content** and quality interactions to children so that they can fully acquire the necessary knowledge, skills and attitudes to learn **about, in and for** the environment. Through an inquiry-based learning process and integrated units of work across all learning areas, children become involved in inquiring, discovering and questioning which prepare the all-round development of each child in the class. Such programme, should offer stability but also should accommodate flexibility to allow spontaneous opportunity or "spur of the moment" for learning. Children are expected to enjoy the programme in an enlightening way and should be able to see the linkage between theory and practice.

All in all the teachers are encouraged to design an interdisciplinary activity-based programme of environmental education that it stimulates curiosity and inquiry. The supportive learning environment is in a safe, secure and warm atmosphere that children truly enjoy the programme of learning to acquire the objectives of awareness, knowledge, skills, attitudes and actions to enable them to become "small" environmentalists in their own setting. It sounds a bit abstract of just talking what should be done in the classroom using the activity-based interdisciplinary approach to teach environmental education. The following is an example of a curriculum unit used to illustrate the ideas and intentions more explicit to teachers.

A unit example of "TREES" using the activity-based interdisciplinary approach

There are different scales to plan for an environmental education curriculum programme. One can work out an annual programme with all the environmental concerns and elements infused into all subjects and learning areas throughout the school. Or one can work on a special theme across the school curriculum to enable students to see the links and development.

Whatever the scale that the teachers choose to work on, it certainly needs full support from the school authority and the collaboration among all staff members of the different teaching areas to facilitate and to enhance the inter-relatedness that we want to advocate. Based on a thematic programme prepared by one of my graduate diploma teachers doing environmental education at Q.U.T., it is modified and strengthened to illustrate the effectiveness of doing a common environmental theme in lower primary which hopefully can demonstrate the essential features of an activity-based interdisciplinary approach in teaching environmental education.

The theme of this unit is – **Have you hugged a tree today?** This unit is prepared for a period of one term (there are two terms in a semester and two semesters in a year) which is approximately ten weeks in duration. The unit is designed for a Grade three class (age 7 to 8) with an average class size of twenty-five students.

Tree destruction is always a current and popular environmental issue for people of all ages. Trees play a vital role in all of our society. Trees provide us with shelter, food, fuel, tools, fibre, medicine and of course natural beauty. Nearly all backyards of the Australian homes contain a few trees in the landscaping around the houses. Trees also help to break down the carbon dioxide in the atmosphere and protect the soil from erosion and saltation. It is of vital importance that every child in Australia should learn about trees and hence commit him/herself to protecting them as far as possible.

The objectives of this unit programme are in line with those advocated by UNESCO-UNEP and the Queensland P-12 Environmental Education Curriculum Guide (1993, 15-18) where skills, attitudes and values, knowledge, and processes are emphasized. Opportunities for its inclusion with current subject programmes are explored. The whole programme has been designed in a way where "trees in environmental education" is not treated as a separate subject but intertwined into all the major curriculum areas of the primary school. Each curriculum area will have a part to play to help students to learn about trees from different perspectives. They include Mathematics, Language, Science, Social Studies, Health, Cooking, Physical Education, Art, Music, Dance and Drama. There is the strong belief that teaching environmental education through a number of subjects allows the students to understand the issue in greater depth and they are able to appreciate the environment for its worth. The "TREES" programme is designed in such a way that students can enjoy all they learn about trees and they can realize that trees are important to the earth's ecosystems which people need to look after them very carefully. Figure 2 shows the emphasis of each curriculum area in dealing with the various topics of trees. You will notice that students have to plant a seed and watch it grow in Science and at the same time, they are learning about the tree growth in Health. They sing a song about "decomposition" in Music and at the same time, they make up actions and movements to correspond with the words in the song when they are doing Dance and Drama. The combined effect of learning trees through different subject areas is to reinforce what the teacher is teaching the students and that it is a positive way of assisting them to learn about and care for the environment with a variety of activities and techniques in a variety of subjects.

It is with this hope that the unit programme can help the children in a little way to learn and be aware that trees are important and need our daily hug to keep them healthy, which in turn also helps the ecosystem to maintain its health status quo as well.

Conclusion

The activity-based interdisciplinary approach of teaching environmental education across the school curriculum certainly provides good effective learning opportunity to students to realize the importance of being inter-connected among all subject areas. This also enables them to adopt a holistic view of environmental education. The activity-based learning provides the opportunity for children to engage in stewardship in caring and protecting the environment. However, such an approach requires a strong supporting and collaborating environment from school, teachers, students and even parents to make it work. The conventional way of teaching in subject compartment simply cannot help to fulfil the goals as advocated by the Belgrade Charter and Tbilisi Declaration. Teachers in particular need to realize that their role should be changed from an authoritative instructor to a friendly facilitator if genuine outcome is to be observed. Everybody is talking about "thinking global but acting local". I believe the same should apply to educational school setting that we hope to prepare as many "small" environmentalists as possible so that each of them play their small but vital part in

enhancing, sustaining and preserving the environment which is now very much at risk.

Though this paper was written with kindergarten and primary curriculum in mind, it is also very much encouraged to see teachers in the secondary school setting make an effort to incorporate the **hands and heart** together in their subject teaching. The modules in environmental studies in Liberal Studies of the 6th form education in Hong Kong provide an excellent opportunity to exercise the activity-based and interdisciplinary approach, though obviously at a more advanced and critical level of treatment. As teachers involved in the important mission of preparing 'small' environmentalists, we need to find the best and most effective ways to enhance such vision.

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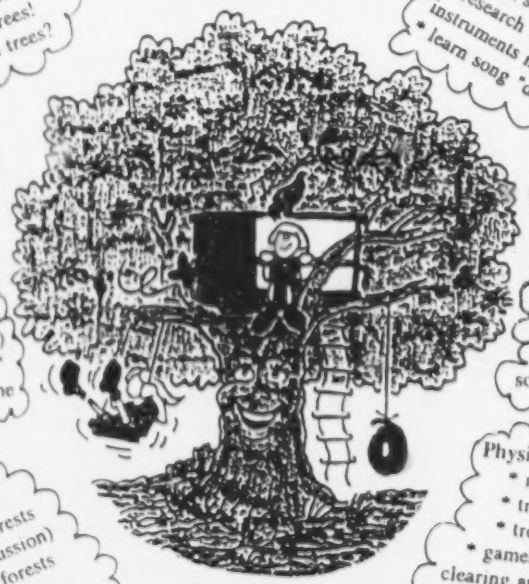
Author

Tammy Kwan, Lecturer, School of Social, Business & Environmental Education, Queensland University of Technology.



Cooking
* related to the maths component - measurement?
* leaf print biscuits.
* tree cakes
* chocolate log cakes.

Mathematics
* measuring leaf shapes on graph paper.
* measuring heights and widths of species of trees
* bar graphs of items at home and school which are made of trees.
* the tree game (refer to 'In Touch')
* Topic 41 - shadows (science sourcebook)
* maths sourcebook unit being completed at the time.

Art
* leaf prints.
* leaf splatter paintings.
* bark rubbings.
* tree material collages.
* making paper.
* watercolour paintings, postcards or cards.

Science
* sourcebook - topic 33 dependence of animals on plants.
*forest fun - sheets 1,3,4 & 5.
*plant a seed and watch it grow.
* what are trees?
* Looking at trees!
* Who lives in trees?

Music
* one billion trees. * create a song about trees, caring for them.
* make musical instruments from seeds, leaves etc.
* research information about instruments made from trees.
* learn song "decomposition".

Social Studies
* our school grounds
* school excursion to forestry and park
* tree booklet
* sourcebook unit 1 (Australian Landscapes)
* sourcebook unit 2 (Australian Communities)
* celebrate 'Arbour Day' design activities at the time

Dance and Drama
* role playing (refer to 'in touch')
* create a tree dance to be created and danced with the song "decomposition"

Health
* growth of a tree.
* adopt a tree.
* looking after our forests (part 1 - reading/discussion)
* looking after our forests (part 2 - fact sheet)
*source book Main Ideas 1 & 6

Physical Education
* rope course
* tree aerobics
* tree climbing
* games such as land clearing and centipede tag (see mastering rainforests)

Language
* create an interest centre
* contract work based on text - 'when Dad cuts down the chestnut trees?'

listening
* listen to reading sessions of books on trees.
* videos - "Ferngully" and "Where the forest meets the sea".

creative/process writing
* model how to write a story/poem (writing process).
* create a story/poem on their adopted tree.
* computer program.
* keep a diary of their tree experiences.
* write a thank-you note to the Forestry Department.

reading
* when Dad cuts down the chestnut tree?
* The Lorax.
* A tree with a thousand uses.
* The giving tree plus others.
* Vocabulary from book, e.g. chestnut, rocking, soldiers, borrow, faithful, roar etc.
* poems.
* activity sheets.

香港初中學生錯別字研究

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張瑞文　香港大學
劉國昇　孔聖堂中學
余慧賢　迦密中學
薛玉梅　東華三院李潤田紀念中學

Common errors of using Chinese words among junior secondary students

It is important to identify the problem of errors of using Chinese words (in Chinese "cuobiezi" 錯別字). Its relevance with students' language competence is clear. In China, researches deal with simplified characters (in Chinese "jiantizi" 簡體字), and the contributions aims for "standardisation of words". This paper deals with errors of using original characters (in Chinese "fantizi" 繁體字) of junior secondary students. The multiple methods have been employed to investigate the relationship between the frequency of errors and the language competence of students. The results showed that (1) the frequency of errors of using Chinese words reflects the language competence of students, and (2) different reasons attribute to the errors of Chinese words. This paper finally suggests that we should (1) change the "word count" method in marking Chinese compositions, (2) collect the errors of using Chinese words, (3) encourage students to enlarge their vocabulary and to use more words in their compositions, (4) teach "ci" (詞) instead of "zi" (字).

一、錯別字問題不容忽視

錯別字的多寡屬于個人修養之高下。一篇文章錯別字連篇，不但給閱讀，而且予人不良的印象。一位作者用錯別字或者不會寫的字太多，亦往往會影響他所表達的內容。許多人都有一執筆忘字」的經驗，都會有一字到用時方恨少」之嘆。

錯別字在成績測量方面極爲重要。學生的語文學習成績與錯別字有關：錯別字是一項計量成績的指標。例如測驗題寫錯別字會扣分，問答題關鍵詞語寫錯別字亦會影響分數。凡是用中文學習的科目，都會在不同程度上牽涉到此問題。

香港工商界普遍認爲時下學生語文能力低落（明報 94年7月16日社評），許多教師相信中文水準近年來已下降（教育統籌委員會，1994）。其實，學生語文能力亦與錯別字問題有關。語文能力一般認爲包括「聽說讀寫」四方面，其中「寫」這種綜合運用能力，最爲人重視，人們往往偏重以寫作能力來衡量一個人的語文能力。根據謝、張（1993）的研究，「錯別字」是中學生中文科寫作的一項重要困難；其他寫作困難諸如「詞滙量少」、「詞語運用欠佳」、「執筆忘字（不懂寫字）」等亦與錯別字問題相關連。字詞連綴成文章，字詞可說是文章的構件，而錯別字不好就是字詞問題。所以，錯別字是寫作的基本問題，也是語文能力的基本問題。錯別字問題不認真解決，修訂改善學童語文能力，很多方法都會變成「速食」，而非「營養」。

既然錯別字問題十分重要，語文教育工作者自然會十分重視學生的識字能力。

二、文獻回顧

內地對錯別字的研究，十分深入和全面。方面可從近年出版的著作中（王中，1990；曹先擢，1992；柴世森，1994；王泰恩，1994；鄧明，1994）發現得到。錯別字問題在內地受到重視，主要是得到政府的支持。政府一向十分重視漢字規範工作，這情況香港確是不能相比的。

雖然內地的研究十分豐富，但卻並不完全適合香港語文教育界使用。首先是內地的研究以簡體字爲對象，字音標準是普通話；香港用的是繁體字，讀音則是廣東

話，老師難以全盤借用內地的研究成果。其次是針對問題，內地研究著重社會用字，講求文字規範，以致連中小學生錯別字的研究著作（方仁玉，1993；任遠、徐曉，1993；徐友蘭、陳中復，1994）也或多或少帶有這樣的影子。其實，講求文字規範是應當的，但是，學生這個研究本體，也同樣重要；注重「學生這個研究本體」，可更有效地講求文字規範。

香港在這方面的研究因為不多是，錯別字的研究需要花大量的人力、時間去搜集例子，這是困難所在。譚、何（1981）研究中學生修改錯別字的能力，發現語文能力高的學生在改錯別字測驗所表現的能力較高，相反則低。這項研究間接說明錯別字和語文能力的關係密切。譚（1980）研究中學生的作文字句病例，運用心理學原理對中學生別字作出分類。他的研究對改善學生基礎訓練頗有幫助。

研究香港學生錯別字的論文既不多，所以這類研究是有需要的。而且，研究自相信不同時期的學生可能有不同錯別字傾向，所以這類研究在不同年代應有不同特點。

三、研究的目的

在一個語文教師研討會，許多老師表示中學生的寫作有很多錯別字，但因沒有有系統資料，老師糾正學生錯別字的教學法缺乏效率。他們均希望對學生的錯別字有一個較全面的了解，並表示願意參與這項研究工作，我們於是展開是項研究。

本研究的目的包括以下兩方面：(1)搜集香港初中學生作文中的錯別字，其中常犯的錯別字，可以幫助語文教師教學。(2)分析香港初中學生的錯別字，統計錯別字的字數及出現次數，字的出錯率，錯別字的出現率，錯字、別字的比率，以供教學參考。

四、研究方法

本研究採用多個個案研究法，收集學生的文章，尋找他們寫錯別字，加以分析統計。取樣方法屬「機會取樣」。因為語文老師的工作壓力很大，他們沒有時間參與研究工作，所以用隨機抽樣法行不通。研究員只能邀請語文老師自願參與是項研究工作。而樣本亦經過挑選，希望達致一較生產的效果。

本研究共挑選了45間中學的樣本，15間學校的學生成績屬高等（Band 1、2），15間中等（Band 3、4），其餘屬弱班（Band 5）。共抽了三級（F1、F2、F3）的樣本，每級約400人。每間學校的人數並不一樣。每個學生抽取二篇文章，有些文章屬長文，約四百字；有些屬短文，字數不限。文章的題目和文體也不限。

資料搜集方法是由語文老師從學生的文章中抄出錯別字，他們把包含錯別字的詞抄出，有時甚至抄出整個句子，以便分析錯別字原因。這些語文老師絕大部份畢業於中文系，最少有二年以上教學經驗。抄出錯別字後由研究員整理和統計，並請資深語文工作者訂正錯別字。不過錯誤在所難免，請指正。

本研究的結果只代表樣本，並不能代表全港中學生。

五、研究結果及討論

資料收集後進行整理、統計及分析。現從以下幾方面介紹研究所得：

(1) 錯別字的字數及出現次數

	中一	中二	中三
A. 出現錯別字的字的數量（原來的正字數量）	521	816	800
B. 錯字字數	157	300	168
C. 錯字次數	332	398	200
D. 別字字數	480	678	671
E. 別字次數	936	1049	843
F. 錯別字總字數（B+D）	637	978	839
G. 錯別字總次數（C+E）	1268	1447	1043

表1：初中學生錯別字字數及出現次數

從上表可見：(a) 初中出現錯別字的字的數量（指學生錯別字的原來正字字數。由於一個字寫出來的別字或錯字往往會多於一個，因此錯別字總字數會比出現錯別字的字的數量多）相當大，中一共521個，少於中二、中三的816及800個。原因相信是由於學童踏入中學，經過一年、兩年的學習，認知能力提高了，詞匯量豐富了，用字量隨之增加，於是出錯的字也多了。(b) 中二、中三出現錯別字的字的數量較中一為大，錯別字相

應字較多，計爲中一637，中二、中三978、839，這情況可爲「寫多錯多」但「寫多錯多」並不完全反映學生能力，大們千萬不要抱持「少寫爲佳」的逃避態度。從錯別字總次數看，中一爲1268，中二爲1447，中三爲1043，雖然錯別字總數是增加了，但錯別字總次數則並非相應增加，而是相反地減少了。初中學生的錯別字總數和錯別字總次數的增加是不成正比的。(c) 學生在初中階段的認知能力發展極快，從每一級的錯別字數量情況都可發現得到。中一認知能力較低，用字量雖然較少，但錯別字的次數則極高。中二認知能力提高了，用字量增加了，但錯別字的次數卻並非相應增加。中二認知能力繼續提高，雖然用字量和中一一樣的增加了，但無論是錯別字數，或者是錯別字次數，都大大地減少了。

(2) 字的出錯率

	每字平均的錯別字字數 (F/A)	每字平均的錯別字次數 (G/A)
中一	1.22	2.43
中二	1.19	1.77
中三	1.04	1.30
初中 (中一至中三)	1.14	1.75

表2：初中學生字的出錯率

字的出錯率包括兩項比率：一是出現錯別字的字的數量與錯別字總字數的比率 (即表1中的F項除以A項)；二是出現錯別字的字的數量與錯別字總次數的比率 (即表1中的G項除以A項)。

從上表可見：(a) 初中學生每字平均的錯別字字數在1至2次之間，每字平均的錯別字次數介乎1至2次。(b) 中二每字平均的錯別字字數及次數分別爲1.22及2.43，相比於初中 (中一至中三) 的平均數1.14及1.75，明略爲偏高。中二每字平均的錯別字字數及次數分別爲1.19及1.77，其較接近初中的平均數，這顯示中二在減少字的出錯率方面有明顯的進步。(c) 字的出錯率按年級遞減，這顯示學生的能力逐年改善。

(3) 錯別字的出現率

	錯字平均次數 (C/B)	別字平均次數 (E/D)	錯別字平均次數 (G/F)
中一	2.11	1.95	1.99
中二	1.32	1.54	1.47
中三	1.19	1.25	1.24
初中 (中一至中三)	1.48	1.54	1.53

表3：初中學生錯別字出現率

錯別字的出現率是指錯別字的平均出現次數。從上表可見：(a) 除了中一學生錯字平均數爲2.11外，初中學生錯別字的出現率一般不超過2。(b) 初中學生平均的錯別字出現率大約爲1.5 (初中的錯字、別字、錯別字平均次數分別爲1.48、1.54、1.53)。(c) 中一的錯字、別字、錯別字平均次數分別爲2.11、1.95、1.99，相比於初中的平均數，明略爲偏高。中二的錯字、別字、錯別字的平均次數均沒有超過初中的平均數，這顯示中二在減少錯別字的出現率方面有明顯的進步。(d) 錯別字的出現率的三項指標 (C/B、E/D、及G/F) 均按年遞減，這顯示學生的能力逐年改善。(e) 錯字平均次數的遞減情況比別字平均次數的遞減情況明顯，這顯示別字的改善比錯字的改善明顯。我們初生認爲錯字平均次數的遞減與學生的辨認能力及避避錯誤能力提高有關。

(4) 別字、錯字的比率

	別字、錯字字數比率 (D/B)	別字、錯字次數比率 (E/C)
中一	3.05	2.81
中二	2.26	2.63
中三	3.99	4.21
初中 (中一至中三)	2.92	3.04

表4：初中學生錯別字比率

錯字是寫有的字，別字是不合適的字，兩者性質有異。從記認字形的角度看，學童起初記認混亂，筆畫、部件出錯導致錯字的情況可以理解。但隨著認識的加深，在學習到產生某一錯誤，掌握到漢字的筆畫、部件結構規律後，他們辨認一個字的字形的能力提高了，因錯字的機會便少了。別字涉及正確書寫字形的理解問題，漢字字數多，形近、音近、義近的字也多，學習自然不易，加上方言的影響，學童辨別別字的能力能否隨年齡、錯字的能力的增加而增加存在疑問。學童錯字、別字的比率可在這方面給與一些啓示。這裏的錯字，別字字數比率是指表1中的D項除以B項，錯字、別字次數比率是指表1中的E項除以C項。比率可以讓我們學生避免犯錯字的能力和避免犯別字的能力這兩者的關係。

從上表可見：(a)中一學生的寫字、錯字的字數及次數比率最高，分別為3.99及4.21，這說明他們避免犯錯字的能力最高。(b)中一的寫字、錯字字數比率為2.26，次比一的3.05略為偏低，別字、錯字次數比率為2.63，則比一的2.81十分接近。這情況很特別，我們的理論是中二學生在減少錯字能力方面比中一學生進步多，自由記認能力提高，用字量增加，在一些多錯多的情況下使出現較多的錯字，導致比率低。

(5) 常見錯別字和共錯字

這裏所說的常見錯別字是指本研究中曾提出一次或以上、錯別字不同、的字（見附錄二常見錯別字表）。這二次或以上，作為常見錯別字標準主要是想給老師提供多些考慮的參考，如果以更高的次數作標準，常見錯別字表中的內容當更適合兩性。常見，，但收錄的目是中二所以何謂「常見」，它的界定標準當因不同的情況而有所不同。

這裏所說的共錯字是指本研究中一、中二及中三每年被記能找到的錯別字（見附錄二共錯字表）。從初步的觀察所得，共錯字好些都是每次出現和未改的錯別字，它們可說是最有代表性的錯別字。

六、結論及建議

本研究的主要結論可以歸結為以下兩方面：

(1) 用字量與錯別字字數有關，一般而言是一致多錯多，，但錯別字字數的多寡，能否正確學生的能力，能之時學生能力的是字的出錯率及錯別字的出現率，本研究的結果顯示這兩項比率是按年級而遞減的，這表明是學生的能力提升了。

(2) 學生的別字比錯字多一倍半左右，特別難的別，我們相信引致錯字及別字的因素是不同的。錯字平均次數的遞減與學生辨認能力及避免能力提高有關，這點相信從錯字的「字形」找到線索，但本研究並沒有直接涉及一別字的產生有方言影響的因素在內，這方面可有一些值得研究的題（例如方言的形、音、義對漢字學習有何影響），但本研究未有涉及。

基於上述結論，本研究對教學有以下建議：

(1) 改變作文錯別字的計算方法，以能反映學生能力的是字的出錯率及錯別字的出現率，因此現行的以數錯別字數量計分的做法並不妥當。這種計分法對學生不公平，因為錯得多不一定就是能力低，相反的，更正生能力高，喜歡多運用不同的字的表現一般也較多作文錯別字的計分法，這個問題當然需要更多的研究和討論方能得到較滿意的答案。

(2) 改集錯別字，無論是教師或學生都要這樣做，因為這會對教師教及學生學都會有幫助。改集的錯別字可由學生統計和表，這會減輕老師的工作負擔。

(3) 教師要鼓勵學生擴大詞彙量，寫作時多用不熟的字詞，不要用熟錯別字，因為學生正正是從經驗中能更有效的去發現他們的能力，才能更有效的進行探索，老師應中知道他們的不足之處，避免考生補救之道，這才是可取，而做去一說簡的。但錯別字避免好，是好的，用字方法，，因為錯別字的數量計算，會促使學生以避免錯誤的策略去選取熟字的習慣，當然，本的建議要能夠老師及學生接受，善于研究改變作文錯別字的計分方法非常重要的。

(4) 在識字教學方面，學詞彙教學重要，別字是不合適的字，在一個字無別字，只有在下字中詞語出別字，學生學習漢字若以詞為單位，當有助他們減少別字。

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作者

謝炳星・香港大學社會學系講師
張陽文・香港大學教育學院研究生
劉國祥・北京市中學教師
方慧珍・南京中學教師
許小明・北京第四機床廠中學教師

附錄一：常見錯別字表

中一錯別字

正字	錯別字	正字	錯別字
已經	以經	請你	你你
	已經		部你
	曲經		配你
紀大暴大	紀大暴大	痛苦	痛苦
很少	很小		痛苦
忽然	忍然	開起	題起
坐下	座下	這裡	這裡
男童	男童	放童	放童
渴死	喝死		放氣
事業	事業	雖然	雖然
	事業	頭髮	頭髮
事半難忘	半生難忘		頭髮
進公司	往公司	記事簿	記事簿
	經公司	替成	贊成
床椅	坐椅	蠟燭	燭燭
被迫	被迫		蠟燭
走避不及	走備不及	原來	定來
以後	已後	原子筆	鉛子筆
	己後	這時	這是
	疑後	瀏同	瀏同
或者	或者	自己	自己
增加	增色	初發	初發
	增式	工具	公具
裝飾	裝飾		功具
知道	知到	忘記	忙記
	知導		望記
喝水	渴水	再見	在見
日曆	日歷	容貌	容貌
	日曆	起源	起緣
辦事	辦事	細菌	細囷
籃球	藍球	成績	成績
等待	等待	單純	單純
待遇	代遇		單純
乘客	成客	煩惱	煩惱
乘巴士	乘巴士	氣惱	氣惱
乘涼	剩涼	祖先	祖先
耳朵	鮮子	禮物	禮物
抹好	抹好	訂車	訂車
抹掉	沒掉		訂購
抹乾	沒乾	乘搭	乘搭
反省	反醒		乘答
類型	類形		乘搭
	類型		乘踏
昨天	昨天	等我	等我
	作天	等到	等到
		天真	有真
		孩子	孩子

正字	錯別字	正字	錯別字
命令	令令	時候	此候
出事	出時		假候
凡事	凡是	恐怖	恐怖
公幹	工幹		恐布
	功幹	氣氛	氣紛
迎接	迎接		氣芬
紀錄	紀歷	功能	工能
相識	相識	功課	公課
懷明友	懷明友	廣州	廣洲
喜歡	喜親	腳部	腳部
	喜難	滿足	滿足
隨和	隨和	補習	補習
隨即	徐即	生意	生意
隨著	遇著	考試	靠試
適合	適合		常試
	識合	餘暇	餘暇
舒適	舒息		餘下
倒霉	倒霉	午膳	午善
氣憤	氣憤	話劇	畫劇
	氣焦	雨傘	雨傘
首先恐後	首先擁後	興高采烈	興高彩烈
寂寞	寂莫	想做	相做
爸爸	爸爸	舒暢	舒暢
跳繩	跳繩	喜出望外	起出望外
	跳繩	榜樣	傍樣
	跳僧	葡萄糖	葡萄糖
耕倒	耕到	認得	準得
皇帝	皇旺	賊人	賊人
冒出	露出		賊人
替身	替身	走廊	走廊
改回	反回		走郎
去年這	去年錯	想減	怠減
款式	款色	可知道	可之道
各式各樣	各適各樣	一共	此
金牌	金牌	不幸	不幸
金牌	金排	幸好	幸好
排球	籐球	前日	以日
通知	通知		已日
大廈	大外	支柱	枝柱
郵遞員	帶遞員	支持	枝持
配戴	配載	手錶	手錶
鐵剛	鐵剛	方格	方格
鐵人	鐵人	偏倒	偏倒
	鐵人	觀衆	觀衆
另外	令外	蠟燭	蠟燭
互相	互相		蠟燭
尤其	由其	色識	色色
女士	女仕		色式
東西	東西	鋼琴	鋼琴
姓名	性名		鋼琴
知識	智識	擔心	膽心

中二錯別字

正字	錯別字
生活	生活
要是	要是
海洋館	海洋管
圖書館	圖書舘
恐懼	恐但 恐懼
幫補	幫補 幫補
突然	特然
情信	情吾
偷得	直得
書桌	書卓
將來	張來
剛巧	剛巧如
突個不停	突過不停
鋼琴	鋼琴
被害	害 害 被害
路人	路人 路人
專心	專心
相信	想信
相依爲命	傷依爲命
息息相關	息息雙關
染色	染色
汽車	氣車 乞車
並且	並
難且	難部
怕羞	怕羞
羞恥	修恥
喪失	喪失
車頭喪氣	車頭宣氣
風馳電掣	風馳電製
車廂	車箱 車

正字	錯別字
開源	開源
缺少	缺小
大任	大任 大任 大事
時候	時候 時後
嘗試	常試 嘗試 嚐試 高試
類似	類似
蠟燭	蠟燭 蠟燭 蠟燭 蠟燭
自己 已見	自己 已見 已建 以見 而見
頭載	頭載
頭帶	頭帶
破壞	破壞
重要	重要 重點
景象	景象
名稱	名稱
證明	證明
錯置	錯置
辛苦	辛苦 辛苦
預備	預備 預備 預備 預被
導致	導至 導志 導到
發現	發現 發現 發出 發屑
時間	時間 時間 時間 時間
售貨 冷氣	售貨 冷氣

正字	錯別字
暴躁	暴躁
暴躁	暴燥 暴噪
說道	說度 說到
另一個	令一個 另一個
避免	被免 避免 避免
疑惑 成績	疑惑 成積 成稿
目睹	目睹 目睹 目睹 目到
當時	當事 當是
那時 準時	那是 準時 準時
給他 忽然 不安	給他 忽然 不安
幾個 甚麼事 事情 不知所措	幾個 幾過 甚麼是 時情 不知所措 不知所措
做作	做作 做者
慢慢	休息 剛是
珍重 名字	珍重 名子 名字 名事
大自然 多麼 這些	大自然 多大 這些 這此 這些
原來 連忙 苦惱	完來 連忙 苦惱 苦腦

正字	錯別字
發揮	發揮 發揮 發揮 見義
建義 旅行券	旅行券 旅行券
武藝 狀況 強壯	武藝 狀況 強壯 強壯
嚴寒	嚴寒 嚴寒
開始 明星	開此 名星 明星
以後 日發	已後 日發 日發
萬士 甚麼 恩惠 準許	萬士 甚麼 恩惠 準許 準許
半立不安	半立不安
簡名思義	放名思義 簡名思義
事生 推本往 夥友 重足大口 扣留	事生 推本往 夥友 當足大口 扣留 扣留
煩惱	煩惱 煩惱 煩惱
參照 急救 系統 理由	考照 急求 系低 理拉 理由
理由 而且 是非	理由 已且 以且
解釋	時非 事非 解譯 解繹 解釋 解釋

中三錯別字

附錄二：共錯字表

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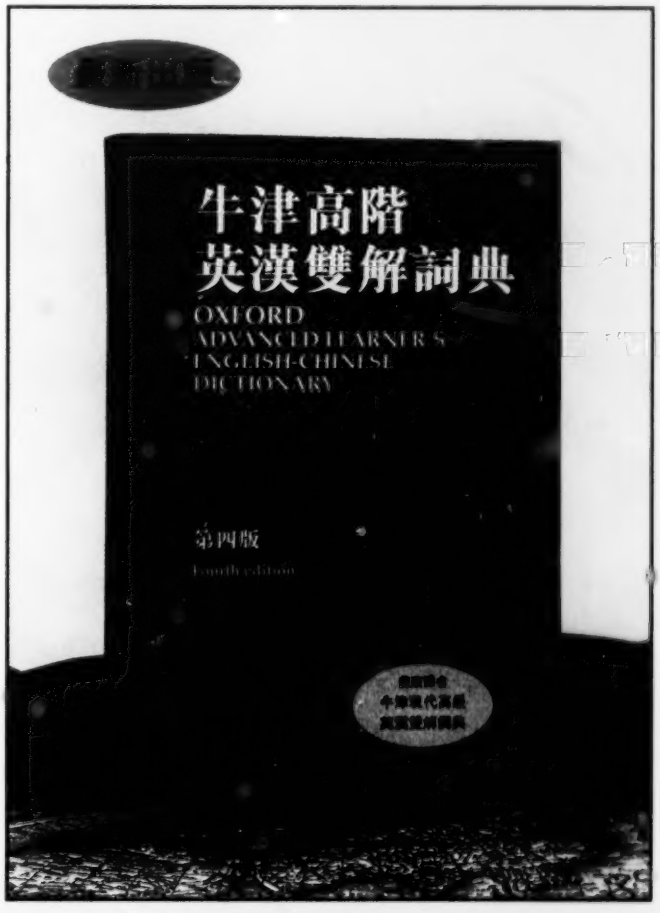

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徵稿

教育與新視野歡迎教師、學校行政人員、輔導工作者、教育學者及研究人員投稿，投稿內容以教育理論研究、教育政策、教育行政、學校管理、教師專業發展、課程與教學、學生輔導、特殊教育、教育心理學、教育科技等為主。

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